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RECENT QUESTIONS IN PROCTOLOGY

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From time immemorial, surgery and surgeons have been concerned predominantly with the practical application of acquired knowledge and skill. Because surgery has developed primarily as an art, surgical literature from the earliest eras has recorded innumerable variants of two fundamental themes—amputation and drainage. A new hemostatic, a new approach, a modified technic to facilitate removal of an organ or evacuation of pathologic material—each serves today as it has in the past to adorn the page and dignify the rostrum.

Moreover, the surgeon, however great his respect for tradition, has been preeminently an individualist, often showing complete disregard for the immediately previous technical schools, and it is perhaps for this reason that, in general, surgical procedures present a somewhat rhythmic reiteration of previous stages of opinion sufficient to suggest that currently fashionable cycles occur here as they do in more mundane fields.

The present-day proctologist excises a fistulous tract whereas two short decades ago he incised it and three decades ago used a seton or caustic, without special thought of the fact that, 400 years before Christ, Hippocrates presented a choice of the knife, the horse-hair seton or the escharotic covered tent for the identical lesion. During our own lifetime the angiotribe, the cautery and the scalpel have each crossed the stage as principal actors in the operation of hemorrhoidectomy as they have crossed and recrossed it during the centuries since Hippocrates described the destruction of piles by pressure, by fire and by cutting.

Proctology, a field long practically abandoned by the general profession to the itinerant and the irregular, has been in recent years to large measure reclaimed to orthodox medicine through increasing realization of its import in the general medical scheme, by the evolution of undergraduate instruction in anorectal disorders and by a definite demand on the part of general practitioners that disorders so widespread in their clientele be the benefit of careful and scientific consideration.

Certain very definite responsibilities arose from the novel renaissance as an orthodox specialty of a hitherto

neglected phase of medicine. Accurate diagnosis became essential and the Hanes position, electrically lighted colonoscope and the perfected barium ray have made it possible. From the general surgeon has been appropriated a rational operative technic which he himself refused to apply to this one field—comprising proper exposure, fortunately facilitated by the new block anesthetics, complete but careful dissection of diseased tissue with whatever instrument would be appropriate in any other body locality, hemostasis with the absorbable suture or coagulating current of today rather than the cautery of another era, and the same attention to the postoperative wound granted to similar wounds in distant portions of the body.

Proctologic surgery has thus rightly concerned itself with the ceremonies associated with the art of surgery, but its future progress will be indexed by its solution of questions connected with the science as well as the craft of our domain.

Any number of interesting problems and adjustments remain for systematic investigation. Among the more important are several phases of comparative surgical pathology applicable to this field and a consideration of the venereal problem as it involves the lower bowel. These are selected to serve as illustrations of the questions referred to and for the further reason that their discussion permits a revision and elaboration of subjects which it has heretofore been my privilege to present before this body.

Variations in disease due to racial peculiarities continue to offer a field of investigation no longer limited in its interest to the Southern practitioner.

Nine years ago before this section I called attention to the role enacted in rectal pathologic changes in the Negro by that racial peculiarity termed the fibroplastic diathesis—the inherent ethnic predisposition to develop adult connective tissue in excess in response to trauma of any type.¹ From the analysis of cases presented at that time, it was indicated that rectal disease in general is equally prevalent in the Caucasian and in the Negro, that cancer, pruritus and fissure are less common in the Negro, while the inflammatory lesion, including fistula, is more often found in the Negro. Benign rectal stricture, accompanied by other manifestations of the fibroplastic diathesis, was eleven times as frequent in the Negro, while hemorrhoids occurred only half as often. In addition microscopic studies of a series of excised hemorrhoids from both races indicated that fibrosis is the dominant feature of the Negro hemorrhoid which suggests that the varicosity effaces itself in the Negro.

In the discussion that followed Dr Rudolph Matas, whose splendid studies on comparative surgical pathol-

Owing to lack of space this article has been abbreviated in THE JOURNAL by the omission of figure 1. The complete article appears in the author's reprints.

Read before the Section on Gastro-Enterology and Proctology at the Eighty-Fourth Annual Session of the American Medical Association Milwaukee June 15, 1933.

¹ Rosser, Curtice. Rectal Pathology in the Negro. J. A. M. A. 54: 93 (Jan 10) 1925.

ogy published twenty-eight years before had served as inspiration for my own work, summarized the experience of the division of anorectal diseases of Charity Hospital, New Orleans, for the decennium 1914 to 1923, inclusive. Except that the incidence of cancer in Negroes in his series was higher, the statistics were in general agreement with those reported from Dallas. Dr. Matas had not, however, convinced himself that the fibroplastic reaction of the Negro was the underlying cause of the higher incidence of nonmalignant rectal stricture in the race, believing that the greater frequency with which the Negro harbors the spirochete and the tubercle bacillus accounted for the discrepancy.

That neither tuberculosis nor syphilis is the prime cause of the rectal ulceration which eventuates in benign obliterating stenosis is the present considered opinion of many others besides myself. That a reaction very similar to keloid formation of the skin occurs in and under the rectal mucosa has remained my belief, a belief augmented by universal detection in the ulcerated Negro rectum of characteristic firm submucosal nodules before the stage of or separate from the constricting band, nodules which have a similar etiology, feel and histopathology to keloid and which are not found under similar conditions in white patients.

The comparative reports of Matas from Charity Hospital were supplemented in 1928 by Dr. Jeff Miller² who summarized the statistics of the years 1917-1926 with special reference to gynecologic disorders. Among his figures one observes the fact that uterine fibroids occurred in 23.5 per cent of Negro gynecologic admissions as opposed to 3.4 per cent in white persons, that 94.4 per cent of the cases of elephantiasis of the vulva were in Negro women and that 67.7 per cent of 164 fistulas occurred in the Negro race.

Pearl's³ statistics from 6,670 autopsies in the Johns Hopkins Hospital show that in this group malignant tumors occur from two to three times more frequently relatively among white persons than they do among Negro persons, this racial difference being much more marked relatively for sarcoma and other noncarcinomatous groups. The author states that other trustworthy data show that in general malignant new growths occur with considerably greater frequency in the white race in the United States, which may indicate in the Negro a lower susceptibility of truly genetic racial origin.

Dr. Hoffman,⁴ who has had a long interest in this question, published in 1931 an extremely interesting compendium of statistics from this country and Africa bearing on the comparative frequency of cancer in the white and Negro races, his own conclusion being that malignancy is highly uncommon in the Negro living in Africa and was extremely rare in our slave population but that this partial exemption is being lost through change in living conditions and perhaps also through white intermixture—the cancer mortality of our American Negro population tending more and more during the last thirty years to approach the corresponding cancer death rate of the white population. Of ninety-three cases of rectal cancer coming under my observation, 65 per cent were in Negroes, a decided increase over the incidence formerly reported. All were adenocarcinomas and four developed in old fistulous tracts.

Seven years ago, when I⁵ brought to the notice of this section the anorectal phase of the venereal problem, syphilis was still regarded as a not uncommon fact and the high incidence of gonorrhea was first being appreciated. I now have every reason to retract the impression reported at that time that approximately one fourth of inflammatory rectal strictures were syphilitic in origin, as my own observations have confirmed those of others that manifestations of tertiary syphilis are quite rare in the anorectum.

The perianal chancre is seen more commonly in crowded centers; my experience includes only three instances. Chancroid, however, is sufficiently common to be considered in the differential diagnosis of an anal ulcer. The typical lesions are multiple, the two commissures being favorite sites, the ulcer is ragged and undermined, induration is absent, a thin purulent discharge is seen on the ulcer surface and the predominant symptom is severe constant pain aggravated by the slightest touch (fig. 1).

The larger group of these cases have been seen in medical school dispensaries, however. I find ten instances recorded in my private files since 1925. Of these, eight were young white women and in two of these cases the infection was an unwelcome and at first unsuspected invader of postoperative wounds. The diagnosis must be confirmed by auto-inoculation and elimination of syphilis, as the microscopic picture is not helpful and smears seldom reveal the Dreyer organism. Before 1928 these patients were placed in the hospital, the anal sphincter was severed to relieve the characteristic intolerable pain, and the acids and escharotics which are still, I believe, in use among urologists were applied to the lesion after local cocaineization. Since 1928, all patients after confirmation of the diagnosis have been placed on intravenous mercurochrome and no lesion observed in my private practice or dispensary service has failed to heal rapidly and completely as the result of this single therapy.

Rectal gonorrhea was first described by Hecker, a professor in Erfurt in 1789. Jullien, about 1886, reported additional studies and described a triad of findings he thought essential to confirm the diagnosis, purulent discharge, broad anal ulcer and condyloma. Neisser, at the second International Congress of Dermatologists in Vienna in 1892, stressed the importance of this condition and continental writers have continued to discuss its incidence and therapy since. In the United States the disease has continued to be regarded as a rare and self-limited complication requiring no attention except for a short period of palliation in those cases (the minority) in which unusually severe acute local reactions enforce it.

Anal gonorrhea, which invades the rectum only as a secondary process, is a rare disease in the male; it is, however, a quite common concomitant of urethral and cervical infection in the female. Adherence to the diagnostic criteria of Jullien has been responsible for the failure to recognize the condition as a very small percentage of these patients present rhagades, external ulcers and condylomas.

Hayes⁶ in 1929, reviewed the literature on this subject, which already suggested wide prevalence called attention to the ease with which the disease could be overlooked, and emphasized the occurrence of such

² Miller, C. J. Comparative Study of Certain Gynecologic and Obstetric Conditions as Exhibited in the Colored and White Races. *Am. J. Obst. & Gynec.* 16: 662 (Nov.) 1928.

³ Pearl, Raymond. Progress Report on an Investigation in Race Pathology. *South. M. J.* 21: 1001 (Dec.) 1928.

⁴ Hoffman, F. L. Cancer in the North American Negro. *Am. J. Surg.* 14: 229 (Oct.) 1931.

⁵ Rosser, Curtice. Clinical Variations in Negro Proctology. *J. A. M. A.* 87: 2084-2085 (Dec. 18) 1926.

⁶ Hayes, H. T. Gonorrhea of the Anus and Rectum. *J. A. M. A.* 93: 1878-1881 (Dec. 14) 1929.

complications as stricture, abscess, fistula, condyloma and polypoid rectal excrescence.

The most important contributions to this discussion since that time have been in the German medical prints. There has been a substantial agreement that the incidence is high, that it is possible for the organism to remain in the rectum with unabated virulence for a long period and that rectal inoculation in women usually occurs during defecation when the vaginal secretion is forced out on an everted anal mucosa. On the other hand, there is no agreement found concerning the tissues in which the organism embeds itself after the acute phase, and the treatment advocated is generally vague and nonspecific consisting of suppositories, large lavages and application of silver nitrate solutions to large areas of the rectal mucosa.

Schiffman,⁷ in 1929, reported that in a series of 121 women with gonorrhea, 66 per cent had a rectal infection, 15 of 31 female children had rectal gonorrhea. Temesvary⁸ studied 1,182 gonorrheal women patients seen over an eight year period in a Budapest maternity clinic and 22.1 per cent were found to have the organism implanted in the rectum. Of 256 girl children, 74 were contaminated. The greatest incidence was between 16 and 30 years. Klovekorn⁹ reported from the dispensaries of the university of Bonn, stating that in 1925 rectal involvement was discovered in 24 of 100 women and that in 1930 the percentage was 64.4 per cent. Dahmen,¹⁰ in 1932, stated that, in the examination of gonorrheal patients at a Berlin municipal station serving tramps and homeless women, 41.2 per cent were found to have rectal gonorrhea, at another station where the patients were from a somewhat higher stratum the incidence was 25 per cent.

Muhlpfordt¹¹ reported a case in which virulent organisms were found in the rectum two and one-half years after eradication of the primary infection, and Bickel and Abraham's report¹² suggests that the rectum may harbor virulent gonococci for more than ten years after genital infection has disappeared.

In the acute stages the gonococcus would seem to obtain a parasitic dissemination in and on the rectal mucosa. The proctoscopic appearance in early and subacute stages has been described as including a soft, reddened swollen mucosa in the upper anal canal and lower two or three inches of the rectum, with flecks of pus and occasionally punctate hemorrhage. Actual ulceration of the rectal mucosa occurs only in late neglected cases, more especially in the Negro race.

The rectal dispensaries of Baylor University Medical School and of the City-County Hospital of Dallas have treated several hundred cases of gonorrhea during the past ten years (including cases of inflammatory proctitis obliterans accepted by many as a late sequela¹³). Because outpatients especially those of the Negro race, are seen in only the latest stages of the disease and frequently disappear on slight improvement before observations can be completed it is believed that for the purpose of this discussion a brief analysis of twenty-

six cases taken from my office files of the past five years will better illustrate certain phases of the subject from the angle of private practice.

Twenty-four of these patients were white women ten of whom were unmarried.

Of the twenty-four women patients seven were unaware of the presence of cervical or urethral infection, reporting for examination because of rectal symptoms alone. It is interesting to note that every one of these on examination was found to have an anterior infection, demonstrated by finding the gonococcus in the cervix or urethra.

A married woman, aged 28, who three years and seven months before had been found to have an anal infection, was on reexamination found to have retained the organism during that period in the rectum. Smears from the vagina had remained negative during the interim. The clinical virulence of the organism was not ascertainable although cryptitis with mucopurulent discharge was still present.

The following complications were found in this series, developing at various stages of the disease:

Persistent hemorrhoids, one. Removal was required before smears became negative.

Acuminate condyloma, one.

Submucous abscess, one.

Incomplete fistula, one (a deep infected anterior crypt with recurrent swelling and discharge).

Polypoid granulation, one found at the crypt openings.

Anal ulcer, one (a broad granulating ulcer at the dentate line, remains of a posterior infected crypt).

Abscess, then fistula, six. The tracts uniformly led to infected anal crypts and in several the organism was demonstrated in abscess pus.

In the last ten cases the complication was due to persistent infection in the anal crypts. In other words, in 38 per cent of these patients it was demonstrated that cryptitis is a significant factor in the syndrome under discussion.

Free drainage of pus from crypts was observed in a number of instances and the swollen red membrane of the lower two inches of the rectum was interpreted as being the result of a constant purulent discharge from the anal valves deposited in this immediately adjacent tissue. No cases of rectal ulceration were seen in this group, but this sequela occurs frequently in clinic patients as the result of secondary infection of this constantly contaminated mucosa.

Stricture is frequently seen in Negroes because of their fibroplastic diathesis entering the picture when ulcers heal. It was not observed in this group, but I have had the opportunity of observing four typical postgonorrheal stenoses in white women in past years.

My conviction that the anal crypts serve as reservoirs of infection in anal gonorrhea first expressed before this section in 1926, is based on the frequency of observed crypt infection and its direct sequelae and on the necessity to postulate a focus analogous to the urethral glands, prostate and other parts in chronic gonorrhea of the conventional type.

If the anal canal, more especially, the anal crypts are primarily involved in this disease, and if the condition involves changes only in the lowest portion of the rectum and then purely as a secondary manifestation some modification of the present widespread practice of constantly introducing large amounts of irrigating fluids and silver nitrate solutions to the entire rectum and lower sigmoid is essential. These measures encourage a higher dissemination of the process and

⁷ Schiffman, W. Frequency and Diagnosis of Rectal Gonorrhea in Women. *Med. Klin.* 25: 305-306 (Feb. 23) 1929.

⁸ Temesvary, A. Rectal Gonorrhea in Women. *Zentralbl. f. Gynäk.* 54: 3140-3145 (Dec. 13) 1930. *Orvosi hetil.* 75: 112-114 (Jan. 31) 1931.

⁹ Klovekorn, G. H. and Zitzle, E. Frequency and Therapy of Rectal Gonorrhea. *Therap. d. Gegenw.* 3: 71-72 1932.

¹⁰ Dahmen, O. Involvement of Rectum in Gonorrhea in Women. *Arch. f. Dermat. u. Syph.* 167: 42-43 1932.

¹¹ Muhlpfordt, H. How Long Can Gonococci in Rectum Retain Their Virulence? *Ztschr. f. Urol.* 27: 711-712 1929.

¹² Bickel, L. and Abraham, L. Frequency and Importance of Rectal Gonorrhea in Women. *Zentralbl. f. Gynäk.* 56: 200-206 (Jan. 23) 1932.

¹³ The possibility that a group of these cases is really due to lymphogranuloma venereum will be mentioned later.

in the case of silver nitrate applications to the entire rectal mucosa, lower the resistance of this surface

In the acute stage, rest in bed, hot sitz baths, a bland diet smoothed additionally by small amounts of liquid petrolatum and the use of a very small bland anal douche with a bulb syringe, as suggested by Hayes,⁹ will allay pain

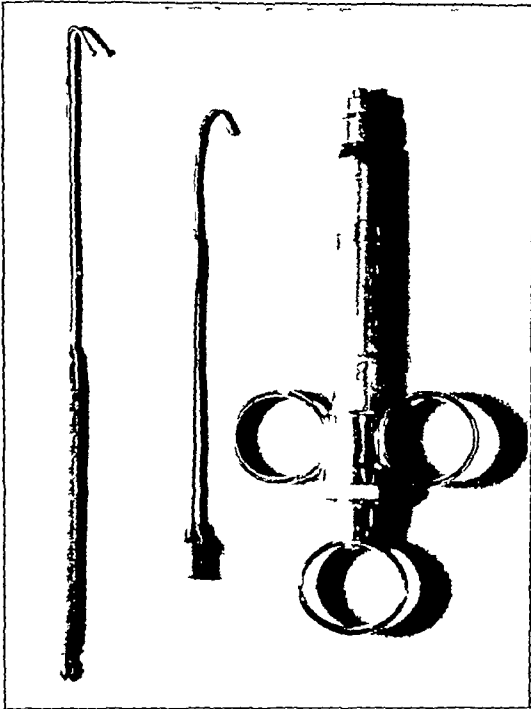


Fig 2—Crypt hook, crypt irrigator and syringe used in the treatment of gonorrheal anal cryptitis

When the tenesmus and local discomfort are abated, the logical procedure is to investigate the lower bowel, using a small anoscope, and direct the curative portion of the treatment to the infected anal canal

The crypts will be found to show deepening and marginal reddening, and on slight pressure a drop of pus is expressed. In this subacute stage it is my practice to irrigate the crypts gently, using a device which I constructed by bending a flexible sinus irrigator to the proper "shepherd's crook" angle and attaching it to a control syringe (fig 2). A small cotton tampon thoroughly impregnated with a mild antiseptic in an oil base is then inserted in the anal canal in contact with the crypts and the mucosa adjacent. The patient is instructed to continue the small bland anal douche.

When the condition enters the chronic stage, the crypt cavities are stimulated by the application of a weak solution of silver nitrate after being cleansed by irrigation (fig 3).

When persistent drainage and increasing depth in one or more crypts indicate that abscess impends, I believe it entirely proper to excise the infected outer surface of the crypt to prevent this very frequent complication, as gonorrheal abscess almost uniformly produces fistula. This should not be done in the acute stage.

Needless to say, the examination and the various steps of treatment can be done satisfactorily only under direct vision through the anoscope. The decision that the process is eradicated is based on obtaining three negative smears from the crypts one week apart.

The mass of recent literature in connection with the "anorectal phase" of the "fourth venereal disease," the manifestations of which are apparently as protean as are the designations under which it is described, makes it impossible to disregard the possibility that some obliterating inflammatory rectal strictures, particularly when accompanied by perianal elephantiasis and pelvic rectal sinus, must be attributed to this disease.

Sulzberger and Wise¹⁴ state that several cases of stricture in Negro women were tested with the Frei antigen with a positive result. DeWolf and Van Cleve,¹⁵ in testing 1,010 individuals, obtained 58 positives, of which three were cases of rectal inflammation and stricture, while Lutz¹⁶ is of the opinion that the "formerly generally accepted theory that inflammatory strictures of the rectum are primarily of a gonorrheal, tuberculous or syphilitic origin must be abandoned," as a "large number" of these strictures can be proved due to lymphogranuloma inguinale. Moreover, Lohe and Rosenfield¹⁷ claim the successful transmission of material from patients with the anorectal syndrome to the brains of monkeys followed by the production of positive skin reactions with monkey brain antigen in patients with the disease.

The contention of those who maintain that inflammatory stenosis, perianal elephantiasis and high rectal sinus are universally specific, infectious, late forms of lymphopathia venerea is apparently based on the theory that the original lesion occurs on the cervix or in the

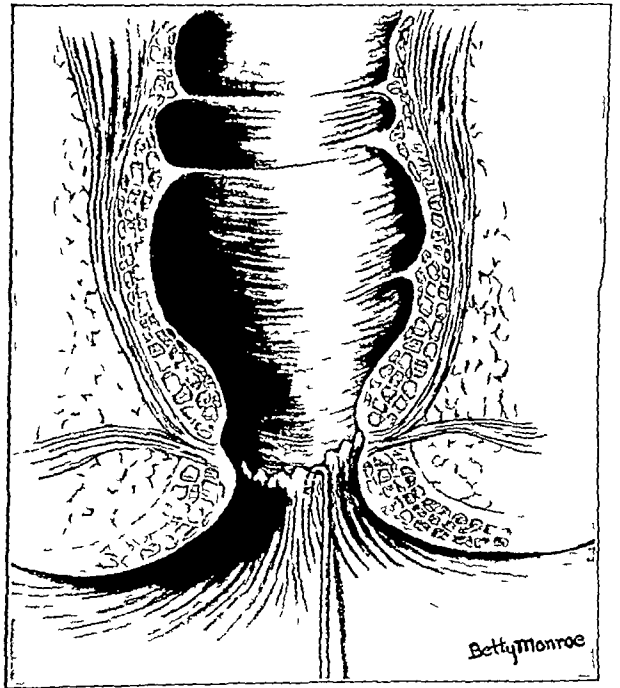


Fig 3—Anal crypts showing method of introducing weak solutions of silver nitrate after acute stage has passed

vault of the vagina in women, the infection being transmitted to the deep pelvic lymph nodes and by retro-

¹⁴ Sulzberger M B and Wise Fred Lymphopathia Venereum J A M. A. 99 1407 (Oct. 22) 1932

¹⁵ DeWolf H F and Van Cleve J V Lymphogranuloma Inguinale J A M A 99 1065 (Sept. 24) 1932

¹⁶ Lutz K. Inflammatory Strictures of Rectum Caused by Lymphogranuloma Inguinale Deutsche med Wchnschr 58 1351 (Aug 26) 1932

¹⁷ Lohe H and Rosenfield H New Observations on Late Forms of Lymphogranuloma Inguinale Med Klin 28 1485 (Oct 21) 1932

grade transportation carried to the periphery to produce elephantiasis, ulceration and, when scarring occurs, stricture. This concept serves, of course, as an explanation of the known increased incidence of stricture in the female. In my own work an attempt is being made to check the incidence of positive Frei tests in the presence of the syndrome under discussion, while the results do not as yet present the unanimity which the enthusiasm of many proponents would lead one to expect, I am keeping an open mind. Lehman and Pipkin of San Antonio¹⁸ tested some 200 cases and obtained only two positive Frei tests from a number presenting inflammatory rectal stricture.

I feel that it is quite possible that this disease plays a definite part in the production of chronic inflammatory lesions of the anorectum, I would suggest, however, that complete abandonment of all previous theories is premature from the evidence. The primary lesion is presumed rather than demonstrated because of its small size and evanescence and no culturable organism has been discovered.¹⁵ The histologic picture is neither typical nor pathognomonic, especially is this true in lesions other than bubo.¹⁴ The antigen of Frei is not entirely satisfactory, being sterilized whole pus. Moreover, the presence of a positive Frei reaction in the absence of specific or pathognomonic local histologic changes is not conclusive per se that the rectal lesion in question is caused by lymphopathia venerea, it was on evidence as intangible that inflammatory stricture was charged to syphilis for so many years.

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In an editorial³ discussion of Bramwell's⁴ Bradshaw lecture on the muscular dystrophies in the *Lancet* in 1925, it was pointed out that one is not likely to reach any rational conception of treatment of the myopathies from clinical studies alone, and that chemical investigation in these conditions is an uncultivated field which will repay any labor that is spent on it. This statement

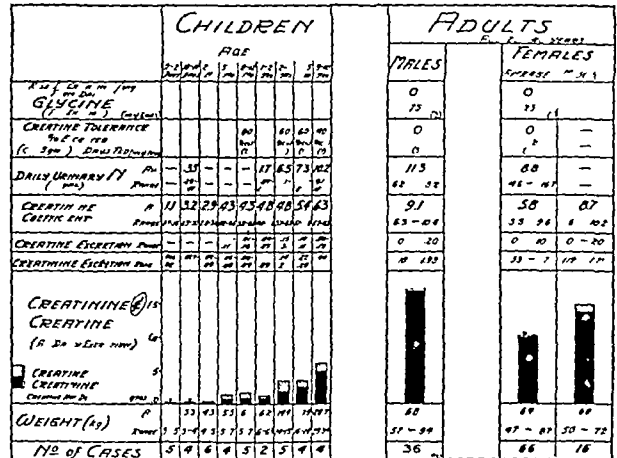


Chart 1—Excretion of creatinine and creatin* in normal persons
The asterisks indicate as noted in the legend on the left hand side the number of cases in which creatine was not determined

is not quoted to minimize the important clinical contributions of the earlier investigators but rather to indicate along what lines further progress probably lies

It was shown by Folm⁵ in 1905 and a little later by Klercker⁶ that the normal adult excretes from day to day uniform amounts of creatinine in the urine but no creatine or only very small amounts, especially in the case of the female. It was also shown that these findings are not readily altered in the normal person by the level of the protein in the diet. It has been claimed that the amount of creatinine excreted bears some relation to muscular mass but not to the tone or activity of the muscles. The significance of this relationship is as yet not entirely clear. Although some believe that it is related to the amount of creatine or creatine phosphoric acid stored in the muscles, the origin of creatinine from this source is by no means established, nor is the mechanism of its formation known. There appears to be, however, an intimate relation to carbohydrate metabolism (Mendel and Rose⁸ and Brentano⁹).

The relative amount of creatine in the urine is materially increased during childhood up to between 10 and 15 years of age and also in the adult during certain physiologic processes such as lactation or in a variety of pathologic processes such as fever, starvation, severe diabetes or other conditions associated with deprivation of carbohydrates, severe exophthalmic goiter and certain myopathies.

It was known as early as 1870 (Rosenthal¹⁰) that certain myopathies were associated with a disturbance

METABOLIC AND THERAPEUTIC STUDIES IN THE MYOPATHIES

WITH SPECIAL REFERENCE TO GLYCINE
ADMINISTRATION

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AND

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Although general attention has been directed to the myopathies since Aran's² communication published in 1850 and much has been written regarding them, our insight into the pathogenesis of this group of diseases has remained rather superficial and controversial

Oppenheim² in summing up his communication on the myopathies before the Seventeenth International Congress of Medicine in London, stated that the concept of the myopathies is as yet not firmly established and that the characteristics of the various groups are not clearly delimited, nor their dividing lines sharply drawn.

18 Lehman and Pipkin Data as yet unpublished

Aided in part by a grant from the Chemical Foundation
From the Departments of Internal Medicine and of Chemistry, New
York State Psychiatric Institute and Hospital

Read before the Section on Nervous and Mental Diseases at the
Fifty-fourth Annual Session of the American Medical Association
Milwaukee June 15 1933

Dr. Frederick W. Parsons, commissioner of mental hygiene of the state of New York, and Dr. Clarence O. Cheney, director of the New York State Psychiatric Institute and Hospital, provided privileges and facilities for the purpose of this study. The Research Committee and various members of the staff of the Neurological Institute of New York, cooperated in the investigation and the Department of Practice of Medicine Columbia University College of Physicians and Surgeons referred patients to us for study.

1 Aran Arch gen de med 24 5 1850

Neuropath vol 10 p 107

3 The Muscular Dystrophies editorial Lancet 2 1179 1925

4 Bramwell E. Lancet 2 1103 1925

5 Folin O Am J Physiol 13 117 1905

6	Klercher	K	O	Biochem	Zt chr	3	45	1907
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7 In previous communications (Brand E and Harris M M J Biol Chem 92 ix 1931 Science 77 589 1933) we pointed out the significance of the behavior of creatine ester hydrochloride for creatinine formation

8 Mendel L B and Rose W C J Biol Chem **10** 213 and 255
1911 1912

9 Brentano C. Ztschr f Klin Med 120 249 1932

10 Rosenthal M. Handbuch der Diagnostik und Therapie der Nervenkrankheiten. Erlangen 1870

in creatinine excretion as indicated by a diminished daily output. This observation was confirmed by various investigators (Langer¹¹), and particularly by Spriggs¹² using the improved method for creatinine determination (Folin)

Levene and Kristeller,¹³ in 1909 carried out quantitative studies on the urine of patients with various muscular disturbances and found that in cases of progressive muscular dystrophy there was not only a low

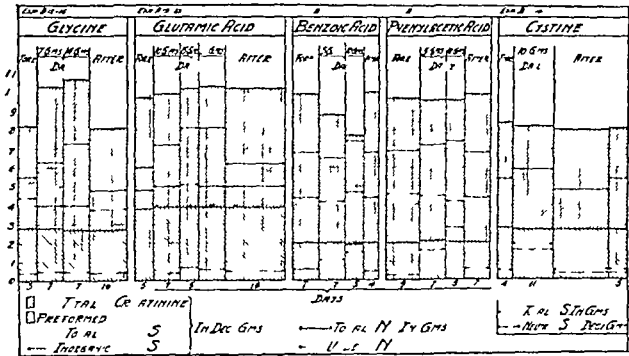


Chart 2—Average daily urinary excretion in muscular dystrophy

creatinine but also a high creatine output. They further observed that increased amounts of protein in the diet increased the amount of creatine excreted by such patients. And unlike normal adults these persons also eliminated a large percentage of small amounts of creatine administered orally. (Such diminished tolerance to creatine is present in other types of creatinuria, and

Compounds Studied in Muscular Dystrophy

Glycine	Urea
Guanido acetic acid	Uric acid
Sarcosine	Creatinine
Alanine	Creatine
d Glutamic acid	Isocreatinine
d Arginine	Betaine
l Histidine	Nucleic acid
l Cystine	Edestin
l Tyrosine	Colatin
d Arginine and Glycine	Casein
Glycyl Glycine	Ammonium acetate
Dextrose	Ammonium chloride
Lactic acid	Benzoic acid
	Phenylacetic acid
	Ephedrine

when present may be influenced by the level of the protein intake.)

Gibson and Martin¹⁴ tried to determine what constituent of the protein molecule produced the rise in creatine excretion in muscular dystrophy but without any success.

In 1929 Brand, Harris, Sandberg and Ringer¹⁵ reported that when glycine, the simplest α -amino acid, is fed, in addition to the diet, to patients with progressive muscular dystrophy an appreciable increase in the creatine excretion takes place. It was also found that arginine, cystine, glutamic acid, histidine, nucleic acid and various other compounds¹⁶ produced no such

effect¹⁷ (Guanido acetic acid, however, was found to produce a marked rise in creatine excretion, as had been previously observed.)

A list of the various compounds which have been studied is given in the accompanying table.

It is well known that the administration of benzoic acid results in a loss of glycine from the body owing to the excretion of a combination of the benzoic acid with glycine in the form of hippuric acid. This fact was utilized to determine the effect of such losses of glycine on the creatine excretion in cases of muscular dystrophy. It was repeatedly found that the administration of benzoic acid produced a prompt and appreciable decrease in the creatinuria.

Since, as already stated, the feeding of glutamic acid produced no effect on the creatinuria, it was considered desirable to investigate what effect the withdrawal of glutamic acid would have on the creatine excretion. This was accomplished by feeding phenylacetic acid, which in man is known to be excreted in combination with glutamine as phenyl-acetyl glutamine. It was found that such feeding had no effect on the level of creatine excretion.¹⁸

Some of the experiments referred to are summarized in charts 2 and 3.

The various experiments which we carried out all indicated that there is a special and significant relationship of glycine to creatine metabolism.¹⁹

Thomas, Milhorat and Techner,²⁰ who were the first to repeat some of our experiments, were able to confirm our observation regarding the effects of glycine and of glutamic acid on creatine excretion. Because of the importance of creatine in the physiology of muscle, these authors fed glycine over prolonged periods of time to various patients with involvement of the muscular and neuromuscular system, and reported that the prolonged administration of this amino-acid had a marked therapeutic effect in some cases of pro-

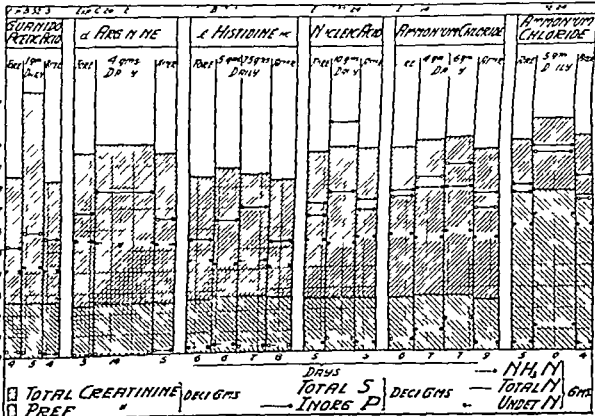


Chart 3—Average daily urinary excretion in muscular dystrophy

gressive muscular dystrophy. A number of other investigators²¹ have also reported favorable therapeutic results.

11 Langer L. Deutsches Arch f klin Med 32 395 1883

12 Spriggs E I. Quart J Med 1 63 1907

13 Levene P A and Kristeller L. Am J Physiol 24 45 1909

14 Gibson R B and Martin T F. J Biol Chem 49 319 1921

15 Brand E, Harris M M, Sandberg M and Ringer A I. Am J Physiol 90 296 1929

16 In this connection it is interesting to note that the feeding of ammonium chloride to one of the patients with dystrophy did not produce an increased elimination of phosphorus in the urine (chart 2) (Brand E and Harris M M. J Biol Chem 97 121 1932 Arch sc biol 18 no 1-4 1933)

17 Brand E, Harris M M, Sandberg M and Lasker M W. J Biol Chem 87 ix 1930

18 Brand E and Harris M M. Science 77 589 1933

19 In a recent publication in Science¹⁵ some aspects of intermediary protein metabolism were discussed and a possible relation to creatine metabolism of glutathione which contains glycine in its molecule was indicated

20 (a) Thomas K, Milhorat A T and Techner F. Ztschr f physiol Chem 205 93 1932 214 121 1933 (b) Milhorat A T. Deutsches Arch f klin Med 174 487 1933

21 Kostakow S and Slauck A. Deutsches Arch f klin Med 175 25 1933

Remen²² and Boothby²³ more recently have reported that glycine and glycine plus ephedrine produced marked improvement in cases of myasthenia gravis. In 1932 we resumed our metabolic studies in the myopathies especially to determine the therapeutic effects of the prolonged administration of glycine²⁴

Twenty-four hour specimens of urine were collected daily from all the patients studied in the hospital and from some of the outpatients. In the latter group whenever continued daily collections were not feasible from two to four twenty-four hour samples of urine were obtained weekly. All the samples were analyzed for total nitrogen creatinine²⁵ and creatine. The urine from the patients with dystrophy studied in the hospital was also examined for total sulphur or inorganic sulphur and inorganic phosphorus. In special experiments the nitrogen and sulphur partition was determined in addition.

As soon as the urinary data indicated that the patients had become stabilized metabolically a creatine tolerance test was carried out by giving the patient creatine in 0.5 Gm doses or multiples thereof for varying periods, as indicated in charts 4 and 5, and determining what percentage of the creatine fed was eliminated. The patient was then placed on glycine in doses of from 7.5 to 25 Gm daily for varying periods, as indicated in charts 4 and 5.

Cinematographic records were made in order to obtain some objective record of the disabilities of the patients. In some of the cases determinations of chronaxia and other electrical tests were carried out. The patients were examined from time to time to determine any subjective or objective signs of improvement.

METABOLIC OBSERVATIONS

1 *Creatinine Excretion*—In patients with progressive muscular dystrophy who were comparable in regard to age sex and weight it was found that the amount of creatinine excreted daily was lower the greater the incapacity of the patient. In fact in some of the older patients who were badly incapacitated (as indicated by I in chart 4) the creatinine excretion was as low as or even lower than the creatinine

We shall report in this paper the studies in a group of cases of progressive muscular dystrophy and also in another group of various types of neuromuscular involvement. Although a large number of cases were investigated we have included in these two groups only those which were studied more intensively from both the metabolic and therapeutic standpoint.

In chart 4 some of the observations on twenty cases of progressive muscular dystrophy are summarized. The patients ranged in age from 7 to 47 years and included only one female. They presented varying degrees and types of muscular involvement. Patients 13 and 17 were brothers, and patients 2, 8, 11 and 20 gave a familial history of the disease.

In chart 5 some of the observations on thirteen patients forming a heterogeneous group of neuromuscular conditions are summarized.

PROCEDURE AND METHODS²⁶

The patients may be divided into two groups those studied in the hospital (cases 1, 7, 11, 13, 14, 15, 16, 17, 18, 19, 1a, 3a, 5a, 6a, 7a and 8a) and those studied in the outpatient department. The patients in the hospital were put on weighed meat-free diets such as were used in our earlier studies¹⁵. For the purpose of the various tests to be subsequently described the protein level was kept at approximately 60 Gm and later increased in some patients to about 100 Gm. The outpatients were also placed on meat-free diets and although the food was not weighed in these cases the protein level was approximately the same, judging from the nitrogen excretion in the urine. After the necessary metabolic observations these patients were permitted to return to their meat diet except for intervals of a few days when special metabolic observations were made.

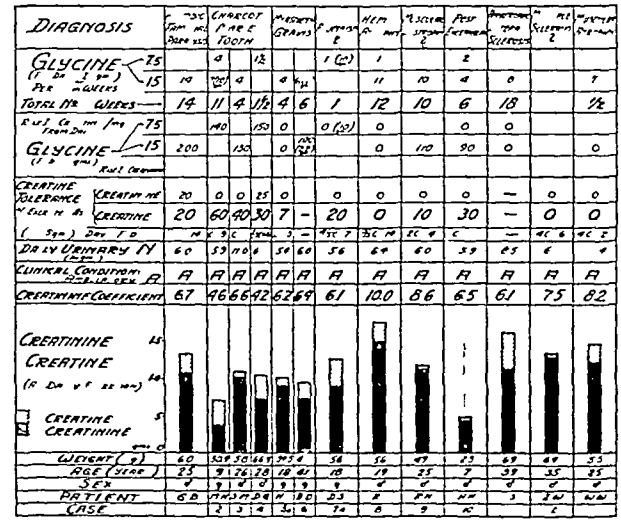


Chart 5—Excretion in various neuromuscular conditions

excretion of some of the children who were not so badly incapacitated (compare cases 12, 13, 17, 18 and 19 with case 8). The creatinine coefficients²⁸ in this group range between 1.0 and 2.2 which is lower than the values reported in the literature for infants 5 months of age (chart 1).

22 Remen L. Deutsche Ztschr f Nervenhe 128 66 1932
23 Boothby W M and others. Proc Staff Meet Mayo Clin 7 547 and 71 1932
24 Brand E and Harris M M. J Biol Chem 100 22 1933
25 Although several neurologists express the opinion that this female patient (case 16) presented dystrophic manifestations they were not entirely certain as to the clinical diagnosis.
26 Dr E C Zabrick and Dr C C Hare of the Neurological Institute of New York furnished valuable opinions regarding the neurologic status of the cases. Some clinical observations in a special group of the cases will be reported jointly in a separate communication. Dr H S Millet made a number of chronaxia determinations.

27 In the later part of this study the Folin creatinine and creatine determinations were carried out with the Pulfrich photometer (Ka J Biol Chem 100 141 1933)
28 $\frac{\text{mg creatinine nitrogen in 24 hours}}{\text{kg body weight}} = \text{creatinine coefficient}$

The level of creatinine excretion remained constant²⁹ from day to day over prolonged periods. Two of the cases recently studied for the therapeutic effect of glycine had been under our observation five years previously at Montefiore Hospital. The creatinine excretion determined under the same dietary regimen was slightly diminished after this long interval, showing the rather remarkable constancy of the creatinine excretion in these conditions. This slight drop in creatinine excretion was accompanied by a slight increase in incapacity over a period of several years (chart 6).

In some instances the creatinine excretion rose slightly as a result of a marked increase in the protein intake (especially in the form of casein) in addition to glycine feeding. This was not accompanied, however, by any apparent improvement either subjectively or objectively in the incapacity of the patient.

The creatinine excretion in the cases of muscular dystrophy was unaltered by the creatine administered for the tolerance test.

As can be readily seen from charts 4 and 5, the creatinine excretion in the various neuromuscular conditions was much greater than that found in comparable cases of muscular dystrophy.

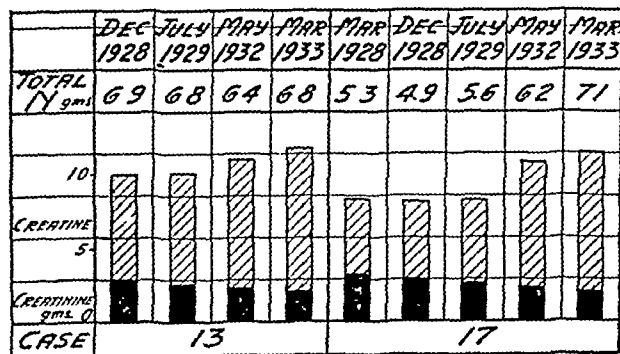


Chart 6—Changes in average daily urinary excretion in cases 13 and 17 over a period of years

2 Creatine Excretion—It is well known that creatinuria is dependent in part on the level of the nitrogen in the diet. However, if one compares patients at the same level of protein intake it will be found that those with muscular dystrophy will usually excrete larger amounts of creatine than comparable patients suffering from neuromuscular conditions. It is surprising that although the creatinine excretion is low in muscular dystrophy, the excretion of total creatine bodies in this group is within the range of that found in normal persons, children as well as adults. In other words, the relative amount of creatine is increased in these cases.

The muscular dystrophy group showed a markedly diminished tolerance for creatine (chart 4). From 40 to 120 per cent of the creatine fed was promptly eliminated. In a general way the diminished tolerance bore some relation to the severity of the clinical manifestations and also to the level of creatinine excretion. Of course this relationship is not an absolute one since the creatine tolerance is somewhat influenced by the level of protein intake³⁰.

²⁹ In case 16 with a questionable diagnosis of muscular dystrophy the creatinine rose from a daily average of 0.71 Gm to 0.79 Gm after four months of glycine therapy. The patient gained 11 pounds (4.9 kg.) during this period but otherwise her condition remained essentially unchanged.

³⁰ The tolerance test in case 14 was carried out when the patient was on a high protein diet and excreting about 13 Gm of nitrogen per day. This probably influenced in part the high percentage of excretion obtained.

In the neuromuscular conditions, as can be seen in chart 5, the creatine tolerance was, generally, considerably greater than that found in the muscular dystrophies. In five of the eleven cases in which the creatine tolerance was tested, little or none of the administered creatine was eliminated. In several cases, especially those diagnosed as the Charcot-Moore type of muscular atrophy, the creatine tolerance was somewhat diminished. In the latter group, however, patient 2a was a girl and patient 4a had dystrophic manifestations. In cases 1a and 4a the administration of creatine tended to increase slightly the creatinine excretion.

3 Effects of Glycine Administration—The daily administration of glycine in varying amounts (from 2.5 Gm daily) and for variable periods of time indicated in charts 4 and 5, produced no effect on creatinine excretion in the cases of muscular dystrophy with the exception of case 16²⁹. In the neuromuscular group only slight increases were observed in a few cases. The creatine excretion, however, was appreciably increased in the cases of muscular dystrophy even with the oral administration of 7.5 Gm of glycine daily, with the exception again of cases 16 and 4. In three of the cases, indicated by a question mark in chart 4, metabolic conditions were unsatisfactory, determining this effect.)

In the neuromuscular conditions 7.5 Gm of glycine daily produced no effect on the creatine excretion even in those cases falling into the group of Charcot-Moore type muscular dystrophy, which were also peculiar as previously indicated, in regard to their creatine tolerance. Larger doses of glycine, however, produced a rise in creatine excretion in some of the patients with neuromuscular conditions, which rise, when it occurred, was usually less than that seen in the cases of dystrophy (compare chart 5 with chart 4).

Our observations in regard to the effect of glycine on creatine excretion in muscular dystrophy were essentially the same as those which we had observed in earlier studies in 1927 to 1929, which were reported at the Thirteenth International Physiological Congress in Boston.¹² However, we did not observe the sparing effect on nitrogen and sulphur metabolism, which we had noted to follow glycine administration in our earlier studies. The details of these experiments will be reported elsewhere.

The rise in creatine excretion which we observed with glycine was the result of superimposing varying amounts of it on a basal diet. The nature of this diet and its nitrogen level may influence in part the effect observed and is a subject which is under investigation at present.

Thus far we have not observed any drop in creatine excretion associated with a rise in creatinine such as Thomas and Milhorat²⁰ reported for some of the cases, which they claimed was associated with clinical improvement following glycine therapy.

CLINICAL AND THERAPEUTIC OBSERVATIONS

Thomas and Milhorat²⁰ reported that some of the patients developed peculiar itching and paresthesia of the muscles as a result of glycine therapy, which they stated usually preceded the clinical improvement in these cases. Up to the present we have observed this phenomenon in only a few cases of muscular dystrophy (cases 3, 5 and perhaps 8). Patient 20, who had been

receiving glycine therapy for several months and who did not experience this phenomenon, subsequently was given glycine and ephedrine, following which paresthesia developed in the muscles

None of our patients with muscular dystrophy receiving glycine therapy³¹ have as yet shown any striking improvement such as that reported by Thomas, Milhorat and Techner^{20a} and Kostakow and Slauck²¹

Of course, it would be difficult to ascertain whether any slight improvement had occurred which could not be readily detected owing to the lack of satisfactory methods for measuring such improvement. In two of the cases manifesting paresthesias (3 and 5) the families were of the opinion that the children were more active as a result of the therapy. However, objectively no notable change has been observed as yet. These patients are still under treatment. A number of patients, particularly patients 14 and 16, improved markedly in their nutritional state during the period of treatment with glycine, their disabilities, however, appear to have remained practically unchanged. Only one patient (case 11) with fairly well advanced muscular dystrophy became worse during the period of glycine administration. This aggravation in the clinical state of the patient was not associated with any changes in the creatine and creatinine excretion. As far as one can tell, the disease has not progressed in the other cases of muscular dystrophy during the period of observation and treatment. Because of the rather slow progress of the disease it is too early to say whether prolonged glycine administration will affect the future progress of the disease in these cases.

In practically all of our cases of muscular dystrophy we have observed loss of the sternal portion of the pectoral muscles with preservation of the clavicular portion except in three far advanced cases (12, 13, 17) in which even the clavicular portion was lost. According to Bramwell⁴ this involvement of the sternal part of the pectoralis muscle is well known to most clinicians, and Gowers³² considered this observation as important as the hypertrophy of the calf muscles for the diagnosis of muscular dystrophy. One of our patients (9a) with marked involvement of the muscles of the shoulder girdle, who was sent to us as a case of muscular dystrophy, had metabolic readings which made us question the diagnosis. It is interesting to note that in this case the pectoral muscles were well preserved.

In the group of neuromuscular conditions charted no striking therapeutic effects from glycine have been observed. Patient 9a, after receiving glycine for ten weeks, stated that although his muscular power did not improve he felt that he did not tire as readily or feel as fatigued after a day's work as before the treatment. The patients with myasthenia gravis have received glycine for only a relatively short period of time and have not shown any notable improvement from this therapy.

COMMENT

Erb³³ in 1883-1884 did much to help clarify the clinical concepts regarding the myopathies and pointed out the probability that the various types described by Meyron, Duchenne Landouzy and Dejerine and by

himself were variants of the same disease and suggested the use of the term progressive muscular dystrophy for the primary myopathies. However, controversy³⁴ still prevails regarding the pathologic observations in this group of diseases and the relationship between the various clinical entities which have been described.

A number of investigators (Meyenburg^{34b}) have reported the absence of any demonstrable changes in the nervous system of patients with progressive muscular dystrophy. This, as Bramwell⁴ pointed out, is a negative conception, and one cannot be certain that functional alterations in the nervous system do not exist which are not demonstrable histologically. In fact, Erb³³ himself, among others, was rather inclined to the view that a trophoneurosis could not be ruled out, and furthermore he pointed out that these patients or members of their family not infrequently had other evidence of involvement of the nervous system, such as idiocy, mental deficiency, epilepsy, chorea and various psychoses.

Another group of investigators^{34b} have reported changes in the anterior and lateral horn cells of the

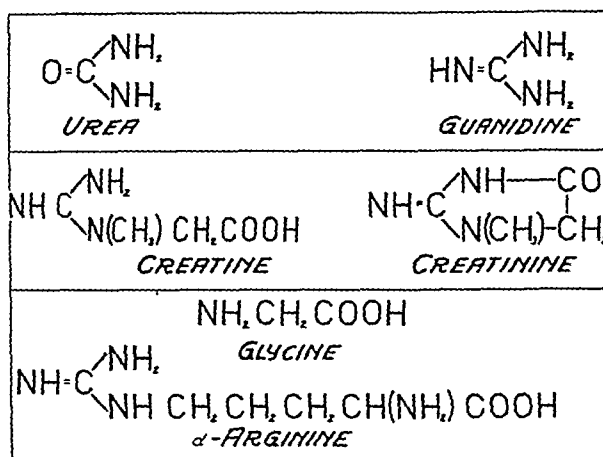


Chart 7—Chemical formulas of creatine creatinine glycine and arginine

spinal cord consisting of either atrophy or diminution in the number of cells, this being especially noticeable in the lateral group of cells. However, as Holmes³⁵ who reported such a case, stated, it is difficult to determine whether the observed alterations in the spinal cord are primary or secondary to the changes in the muscles or whether they are the result of the same etiologic factor producing the muscular dystrophy.

The problem is further complicated if one considers the possible relation of amyotonia congenita, myotonia atrophica or dystrophica etc., to this group of diseases. Furthermore, Meyenburg^{34b}, Holmes³⁵, Spiller³⁶ and others pointed out that it is not always easy to differentiate the primary myopathies from other diseases of the neuromuscular system. This has led, according to Meyenburg^{34b} to the grouping of various progressive muscular atrophies into one large group and the discarding of dividing lines opinions are divided, however as to the advisability of such a procedure.

31 The effect of glycine on so-called nutritional muscular dystrophy (Coettsch M and Pappenheimer A M J Exper Med 54 145 1931; McCay C M, Madson L I and Maynard L A J Biol Chem 100 1911 1933) in guinea pigs and rabbits was studied. No therapeutic effect was observed.

32 Gower W R Pseudohypertrophic Muscular Paralysis London 1879 p 28.

33 Erb W Deutsches Arch f klin Med 34 467 1883 1884 Samml klin Vortr n F Leipzig 1890.

34 (a) Bramwell J (b) Meyenburg H in Henle F and Lubarsch O Handbuch der speziellen pathologischen Anatomie und Histologie Berlin Julius Springer 1926.

35 Holmes G Rev Neurol & Psychiat 6 137 1928.

36 Spiller W G Tr Internat Cong Med London 1913 Neuro-path vol 10 p 115.

In this unsettled state of knowledge it is possible that the variable therapeutic results which have been obtained with glycine may be due to the difficulty in recognizing clinical entities which are as yet not sufficiently differentiated.³⁴ In this connection careful metabolic observations correlated with pathologic data should help considerably in clarifying the picture.

In regard to therapeutic measures it may be of interest to state that a number of earlier investigators, owing to the absence of involvement of the nervous system have considered the muscular dystrophies as due to a nutritional disturbance. On this basis Parhon and Savini³⁷ fed two children with muscular dystrophy fetal muscles with the idea of supplying essentials which might be lacking for normal muscular development. They reported improvement in the two cases following this treatment. This form of nutritional therapy has apparently not been further investigated.

Whether the endocrine glands play a role in this condition, as has been suggested by Janney, Goodhart, Isaacson³⁸ and others is still a disputed point and worthy of further consideration especially as knowledge of the endocrines rapidly increases and more effective therapeutic products become available.

The claims that the muscular dystrophies are due to pathologic changes in the sympathetic system and the therapeutic use of epinephrine and pilocarpine as recommended by Stecherbak,³⁹ Ken Kure⁴⁰ and some of their followers require further study from the standpoint of the pathologic processes and the therapy indicated.

Space does not permit any detailed discussion of the complicated aspects of the metabolism of creatine and creatinine and the significance of these substances for various phases of normal and pathologic physiology. Furthermore the information at present available, although extensive, is as yet insufficient to give us an insight into the disturbances of creatine and creatinine metabolism observed in the myopathies. Elucidation of this problem should yield important information regarding the nature of the pathologic physiology in this group of diseases. Even in the light of present knowledge, however, investigation of creatine and creatinine metabolism in the myopathies as indicated in this paper, will be found of aid in diagnosis of value in the study of the progress of the disease and perhaps of assistance in following the response to therapeutic measures.

SUMMARY

1 Metabolic and therapeutic studies have been carried out in a group of muscular and neuromuscular conditions.

2 The effect on creatine metabolism of the feeding of glycine and the other amino-acids which go to form glutathione was reported. These results were further substantiated by experiments in which glycine and glutamine were withdrawn from the metabolic mixture by the feeding of benzoic acid and phenylacetic acid respectively. The effect of a number of other substances was indicated.

3 The value of the study of the metabolic effects of creatine and glycine administration as an aid to diag-

nosis in muscular and neuromuscular diseases was pointed out.

4 The therapeutic effects of prolonged glycine administration were reported and other lines of investigation indicated.

ABSTRACT OF DISCUSSION

DR EDWIN G. ZABRISKIE, New York. The authors have presented a pathway that may lead eventually to more accurate diagnostic methods and help to clarify the confusing picture of myopathies. In one group of six cases in which certain strikingly similar clinical features prevailed the therapeutic results were negative. This group is the subject of careful investigation at the present time and I will do no more than mention certain striking characteristics, namely, an extremely wide angle of the jaw, so wide that the occlusion of the incisors fails in some instances by an inch and a half. They nearly all have extremely thick, fleshy tongues and the usual early contractures chiefly of the flexors of the achilles tendon of the biceps femoris, the biceps of the humerus, and also a peculiar and rather unique hypertrophy of the anterior peroneal group accompanied by almost complete loss of voluntary motion with loss of mechanical irritability as well as of reflexes. This particular group gave no evidence of improvement at all with glycine. In others some subjective improvement was reported. It corresponded to that reported by Thomas and others, namely, paresthesias of the muscles but it was very slight.

DR HANS H. REESE, Madison, Wis. Drs. Harris and Brand should be given full credit for having instituted at least the studies on myopathies in regard to the creatine and creatinine metabolism. At the Wisconsin Psychiatric Institute at Madison we have treated six cases of progressive muscular dystrophies. The reason that work is progressing so slowly is the tremendous cost of glycine. When we started we had to pay \$120 a pound and the patient should have at least 10 Gm. a day. Of late the price has come down but we have felt that our results are much better with another amino acid, and we have used glutamic acid. With glutamic acid one gets more muscular stimulation and perhaps a quicker response than with glycine. This is especially manifest in small children. With glutamic acid definite muscular paresthesias present themselves at the beginning of the treatment. I am ready to state that we have not cured any of these muscular dystrophies although the patients have improved in their locomotion and activities. Subjectively they feel stronger and less tired.

DR MEYER M. HARRIS, New York. I wish to thank Dr. Zabriskie for the interest he has shown in this study and for his close cooperation. The cost of glycine is much less than it has been. Some manufacturers are putting out glycine at about \$11 a kilogram or \$5 a pound. The early prohibitive cost is becoming less of a factor in treatment than it was in the early part of the studies. We used glutamic acid as one of the controls, and we gave as much as 20 Gm. of glutamic acid a day for a prolonged period. We did not observe any of the paresthesias or any striking effects following its administration in these particular cases. We are at present studying the effects of combinations of the amino acids and as a part of this work we are planning to undertake other investigations with a substance called glutathione. It is a rather expensive compound which contains in its molecule glutamic acid, glycine and cysteine. It is a compound that is very important in oxidation and reduction mechanisms and probably also in detoxifying mechanisms in the body. We keep at present some patients on various combinations of amino acids and others on various combinations of amino acids and proteins such as casein, which according to Bollman has some peculiar effect on the creatinine excretion. The effective amino acids influence only the creatine but not the creatinine excretion. Creatinine is supposed to bear some relationship to muscular mass and the health of the muscles in an individual. Thomas has reported in his one or two cases in which improvement took place that this was associated with a rise in the creatinine excretion. This is a result one would hope to obtain since it would indicate improvement metabolically.

37 Parhon C. J. and Savini E. *Rev. neurol.* **28** 1215 1914 1915
38 Janney N. W. Goodhart S. P. and Isaacson V. I. *The Endocrine Origin of Muscular Dystrophy* *Arch. Int. Med.* **21** 188 (Feb.) 1918
39 Stecherbak A. *Monatschr. f. Psychiat. u. Neurol.* **70** 279 1928
40 Kure K. and Okinaka S. *Klin. Wchnschr.* **9** 1168 1930

TOXICITY OF ALPHA-DINITROPHENOL

REPORT OF CASE

HAMILTON H ANDERSON, M D

ALFRED C REED, M D

AND

GEORGE A EMERSON, M S

SAN FRANCISCO

Prof C Heymans of Ghent has recently revived interest in the fever producing properties of nitrated naphthols,¹ a demonstration of which stimulated Tainter and his colleagues to study alpha-dinitrophenol. Others had shown also that the latter drug causes an increase in cellular oxidation.² Because of its metabolic stimulating qualities, this agent was proposed and used by Cutting, Mehrtens and Tainter³ for the clinical treatment of obesity, hypothyroidism and similar depressed metabolic states. They especially warned against its toxicity, stating that "there are limitations to and possible dangers from the use of the drug clinically. It should be used only under strictly controlled conditions." Since hearing this report we have had a case of intolerance to alpha-dinitrophenol which prompted us to inquire into the toxicity of the compound in an effort to determine contraindications to its use and methods for detecting untoward effects.

Perkins, in a comprehensive review (especially of Mayer's early inaccessible work)⁴ reported a marked variation in the susceptibility of munitions workers exposed to dinitrophenol during the World War. Alcoholic addicts and men with renal or hepatic disease, tuberculosis, malaria or chronic rheumatism have a lessened resistance to the agent. In subacute intoxication "workers claim that they have grown thin to a notable extent after several months' work in DNP. Many complain of general weakness with headaches and dizziness with moderate sweats especially at night." Acute toxicity may come on suddenly, death occurring within a few hours when large amounts are taken into the body, according to Perkins. Alice Hamilton⁵ has suggested means of preventing dinitrophenol poisoning and the Council on Pharmacy and Chemistry of the American Medical Association⁶ has commented on the numerous cases of toxicity that occurred in France during the World War.

Examination of the tissues of human beings dying of dinitrophenol poisoning reveals no characteristic lesions. Edema of the lungs and fatty infiltration of the liver may occur according to Mayer⁴ who made

the first extensive toxicologic study of the agent in 1915. Blood, urine and certain viscera contain sufficient amounts of the drug to give a positive Derrien test.⁷ This may be used to determine the presence of the drug in the urine of patients under treatment, and if the agent persists daily or increases in amount it is to be considered a sign of intolerance, according to Perkins.

In the clinical trial of alpha-dinitrophenol in fourteen cases of obesity, treated as recommended by Cutting, Mehrtens and Tainter, we encountered one severe toxic reaction which differed from case reports found in the literature.

REPORT OF CASE

History—D A L, a woman aged 43, white, married, a housewife complained of overweight, an increase in the past year of 45 Kg. her present weight is 79.5 Kg, her height is 171.4 cm.

At midnight of the day following fourteen days of alpha-dinitrophenol therapy (0.075 Gm of sodium 2,4-dinitrophenoxide three times a day by mouth) the patient complained of severe pruritus confined to both elbows, a small area in the center of her back, the cervical region just below her ears and over both knees. At 6 a.m. the following morning a maculopapular erythematous eruption appeared in the regions noted with a slight swelling of the soft tissues. She was given a powder containing calcium gluconate 1 Gm and ephedrine sulphate 0.025 Gm orally four times a day for four days. Calamine lotion was applied to the affected areas. During the day the pruritus eruption and edema became more severe and extensive. Lassar's paste without acid was applied locally and codeine phosphate in 0.033 Gm doses was given by mouth to relieve her. Twenty-four hours after the onset the whole body, excepting her face and scalp, was involved, with edema of both arms, the left shoulder, the neck and the lobes of both ears and erythematous lesions were found on the back, chest and abdomen and all four extremities, especially over the joints. There was no nausea, diarrhea, dyspnea, dysphagia, dysuria, frequency or discolored urine. The skin manifestations were most acute from forty-eight to seventy-two hours after onset when in addition to the pruritus, pains developed on motion of the fingers and all large joints. The patient complained also of pains in the palms of her hands and in the soles of her feet. Amidopyrine in 0.33 Gm doses was added to the codeine for relief. A nurse was in constant attendance during the five days the patient was confined to bed. On the fourth and fifth days the skin lesions, edema, pruritus and pains subsided and on the sixth and seventh days the only symptoms complained of were stiffness on motion of all large joints. Swelling persisted in the left wrist and fingers which were tender on motion and paresthesias of the fingers of the right hand were present. The skin was entirely clear except for scaling at the sites of the lesions. Since then the patient has had severe pains in one or more joints, without swelling of the soft tissue but rest, amidopyrine and heat afford prompt relief. The temperature, pulse and respiration rate were normal throughout. The patient lost 15 Kg during the two weeks of therapy and after discontinuing alpha-dinitrophenol she lost 25 Kg during the third week.

The family and the marital history were not significant.

The patient lived in California all her life and has been well except for pyorrhea and a chronic hypertrophic arthritis of the cervical spine and both knees. Two years before examination she had a mild dermatitis venenata of the face and neck and just before this had influenza. She gave no personal or family history of allergy or venereal disease. She had not been exposed to

From the Laboratory of A C Reed, M D and the Pharmacological Laboratory, University of California Medical School.

Since this article was written a communication has appeared on the Febrile, Respiratory and Some Other Actions of Dinitrophenol by M L Tainter and W C Cutting (*J Pharmacol & Exper Therap* 48: 410 [Aug] 1933).

1 Cutting, W C and Tainter, M L. *Actions of Dinitrophenol*. *Proc Soc Exper Biol & Med* 29: 1268 (June) 1932. Heymans, C and Bouckaert, J J. *Compt rend Soc de biol* 99: 636 (July 27) 1928. Morals, Alberto. *ibid* 109: 559 (Feb 26) 1932. Morals, Alberto and Casser, Henrietta. *ibid* 109: 561 (1932). 110: 577 (June 27) 1932. Van Uytendaele, P. *ibid* 110: 992 (July 25) 1932. *Arch internat de pharmacodyn et de therapie* 35: 63 (1924). 41: 160 (1931). von Euler, L S. *Compt rend Soc de biol* 108: 249 (Oct 16) 1931. *Arch internat de pharmacodyn et de therapie* 43: 44 (1932). 44: 464 (1932).

2 Magne, H, Mayer, A and Plantefol, L and others. *Ann de physiol* 7: 269 (1931). 8: 1176 (1932).

3 Cutting, W C, Mehrtens, H C and Tainter, M L. *Actions and Uses of Dinitrophenol*. *J A M A* 101: 193 (July 15) 1933.

4 Perkins, R L. *A Study of Munitions Intoxications in France*. *Pub Health Rep* 34: 2335 (Oct 24) 1919.

5 Hamilton, Alice. *Textile Color* 42: 325-375 (1920). *Industrial Poisons in the United States*. New York: Macmillan Company, 1925. 1: 500.

6 Preliminary Report of Council on Pharmacy and Chemistry. *Alpha Dinitrophenol*. *J A M A* 101: 210 (July 15) 1933.

7 Derrien's test: To 10 cc of urine add 1 cc of 10 per cent sulphuric acid and then 1 cc of 0.5 per cent sodium nitrate. Shake and keep in the dark for five minutes. In another tube (about 25 cc capacity) place 2 cc of a freshly prepared 0.5 per cent betanaphthol solution in ammonia water (22B). Pour treated urine into the betanaphthol tube and allow to stand a minute or longer and add 10 cc of sulphuric ether. Shake well and cork tube and flow ethereal solution to separate. Interpretation: If the color of the ether is violet wine color or orange red the reaction is positive indicating the presence of dinitrophenol and products; if colorless or yellow the reaction is negative.

poison oak for at least a week preceding her present illness. Her habits were regular. She had taken no other medication immediately before this illness. Physical examination revealed nothing except as noted. The blood pressure was 120 systolic, 70 diastolic.

Examination—Examination of the urine was negative on several occasions during the five years she has been under observation, and specimens examined after alpha-dinitrophenol therapy were normal also. Derrrien's test was negative. Examination of the blood showed hemoglobin 83 per cent before and 74 per cent (Sahli) after therapy, red blood cells, 4,850,000 before and 4,300,000 after, white cells 11,900 before, with 73 per cent neutrophils, 24 per cent lymphocytes, 3 per cent monocytes, and after treatment, 14,200 white cells with 69 per cent neutrophils, 25 per cent lymphocytes, 3 per cent monocytes, and 3 per cent eosinophils. The basal metabolism was 7 per cent plus, fasting blood sugar 100 mg per hundred cubic centimeters, icterus index 39, van den Bergh reaction was negative, non-protein nitrogen was 34.5 mg per hundred cubic centimeters and creatinine 1.3 mg per hundred cubic centimeters after alpha-dinitrophenol therapy. Roentgenograms of the left wrist and left knee revealed no demonstrable bony pathologic changes⁸ after treatment.

The thirteen other cases treated with comparable amounts (about 3 mg daily per kilogram) of the drug for periods up to two months did not suffer any appreciable ill effects. The average weight loss for the first month of therapy was 2.3 Kg, and for the second month the loss averaged 2.1 Kg. The diet was limited to foods low in sugar and fat.

EXPERIMENTAL TOXICITY STUDIES

As a result of this single severe toxic reaction, we made a quantitative study of the toxicity of the sample of alpha-dinitrophenol used in this series of cases. The melting point of the sodium 2,4 dinitrophenoxide⁹ used was determined to be 297 C, agreeing with samples of the drug used by Tainter¹⁰ and known to be chemically pure. Mayer⁴ contends, however, that impurities are not responsible for the untoward effects noted. He further states that there is a variable susceptibility to

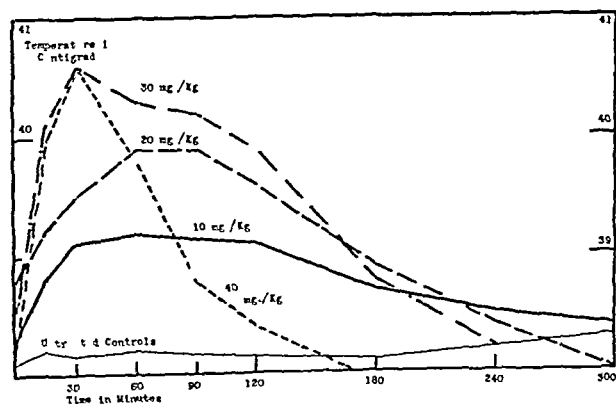


Chart 1—Temperature curves with alpha dinitrophenol (ten rats per group)

the poison in the same species of animals. In the horse, dog, rabbit, pigeon, turtle and frog the toxic dose is 10 mg per kilogram. The agent is toxic regardless of the method of administration. He reports Dinitrophenol is termed a specific poison causing exaggeration of heat radiation and vasodilatation, with a progressive rise of temperature to 45 C (113 F) and

death. It causes a general stimulation of cellular oxidation. Koelsch,¹¹ in 1927, reports tolerance to the agent when swallowed in doses of from 20 to 30 mg per kilogram but observed death with amounts of 50 mg per kilogram. He terms dinitrophenol a specific protoplasmic poison which may cause renal damage and fatty degeneration of the liver. Magne, Mayer and Plantefol¹² confirmed Mayer's original observations on toxicity, i. e., doses of from 10 to 50 mg per kilogram are fatal to dogs, and pigeons, rabbits and frogs are also susceptible. Cutting and Tainter¹ found

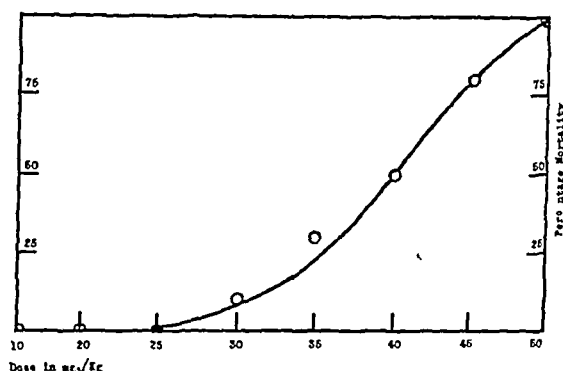


Chart 2—Toxicity of alpha dinitrophenol intraperitoneally in rats (ten animals at each dose)

that from 5 to 40 mg per kilogram produced fever in various animals and man and state that the "margin between the febrile and the fatal dose is narrow."

In our experiments in rats we limited ourselves to determinations of the lethal range of the agent and the character of the temperature rise and finally attempted to determine whether edema occurred in animals given the drug. Ninety fasting normal rats were kept under identical conditions of temperature and humidity and were each given a single dose of the drug intraperitoneally in amounts ranging from 10 to 50 mg per kilogram. Temperatures were taken rectally at thirty minute intervals over a five hour period. The results are noted in chart 1. Ten normal control animals injected intraperitoneally with a corresponding amount of physiologic solution of sodium chloride were kept under identical conditions without showing an appreciable alteration in temperature. Chart 2 reveals the lethal range for the agent in the group of rats studied. Fifty per cent of the animals died with 40 mg per kilogram and all rats given 50 mg per kilogram died immediately after the height of pyrexia, which occurred within the first hour. No gross evidence of edema or other tissue damage was observed in any animal.

COMMENT

A case of alpha-dinitrophenol allergy (total oral dose of 39.3 mg per kilogram over fourteen days) is presented, which may be termed a "qualitative idiosyncrasy," according to Storm van Leeuwen's classification.¹² It is apparently not an instance of small therapeutic amounts of the drug producing symptoms described for the known toxic effects of large doses. Dr. Tainter has told us of cases of cutaneous reactions to the compound somewhat similar but less severe than the one described here. Unfortunately, we were not

⁸ Courtesy of Drs. Ingber, Rodenbaugh and Kile.

⁹ Eastman Kodak Company, Rochester, N. Y. Organic Chemical List No. 24 compound No. 2077.

¹⁰ Tainter, M. L. Personal communication to the authors.

¹¹ Koelsch, F. Zentralbl. f. Gewerbehyg. Unfallverhüt. 4: 261 (Aug.) 1927 through Chem. Abstr. 22: 4656 1928.

¹² Storm van Leeuwen, Willem. A Possible Explanation of Certain Cases of Hypersensitiveness to Drugs in Men. J. Pharmacol. & Exper. Therap. 24: 25 (1928) 1924.

familiar with Perkins' warning that individuals with chronic rheumatism, alcoholism, tuberculosis and renal and hepatic disease have a lessened resistance to the agent. Our patient suffered from chronic hypertrophic arthritis before therapy, and after alpha-dinitrophenol had severe intermittent joint pains in areas previously not involved. There was no evidence, however, of permanent organic damage so far as physical examination and laboratory tests could determine. The thirteen other patients given the drug in therapeutic amounts had no apparent untoward effects. It is suggested that Derrien's test be used in determining the presence of the agent in the urine of patients under treatment as a means of detecting intolerance to the drug, although in this case of allergy the test was of no value.

The toxicity in rats of the compound used in this group of patients corresponds to the reports of previous investigators, the average lethal dose being 40 mg per kilogram. Toxicity work of this character, however, is of no value in predicting the occurrence of allergic responses. It is especially to be noted that the toxic range of alpha-dinitrophenol is broad, indicating a high probability of untoward reactions at relatively low dosage. On this account, dosage in human beings must be strictly and conservatively controlled, and it is recommended that it be based on average body weight for age, sex and height of the patient. In our opinion, it is yet to be demonstrated that this drug is as safe and satisfactory for weight reduction in human beings as other methods in common use.

Parnassus and Third avenues

COMMENTS ON THE HIGHER X-RAY VOLTAGES

ALBERT SOILAND, MD, DMRE
LOS ANGELES

The headline publicity which has been broadcast over the nation calling attention to this or that 1,000,000 volt x-ray machine as a cancer cure is both ill timed and unfortunate. In the first place, there are in the United States today only two higher voltage institutions (one in California and one in New York) which have successfully maintained a therapeutic voltage over 500,000 for an appreciable time period. In the second place, neither of these institutions, to my knowledge, is willing to claim any extraordinary results or reactions over those formerly achieved. Several years must elapse before an authentic evaluation can be placed on any clinical reactions from this new x-ray colossus which would warrant the assumption that cancer is thereby brought any nearer to solution.

From a survey of the results of efforts in developing the higher x-ray voltages up to the present, one may accept as a fact that the shortest effective wavelength now available corresponds to a voltage of between 500,000 and 600,000. At these potentials a tube carrying 5 milliamperes emits a radiation intensity that is comparable to that from approximately 500 Gm of radium. With such an enormous amount of radium, a great many more hard gamma rays would be found than in the x-ray tube mentioned while a greater proportion of radium gamma radiation would be inactive

in that it would not be absorbed but would penetrate through and beyond the tissues within the usual therapeutic range.

From an economic standpoint, therefore, the comparison is very largely in favor of the x-rays, as the cost of 500 Gm of radium would be insurmountable, so that it will never be known what a radium content of that immensity might offer. On the other hand, the expense connected with an x-ray equipment to yield the

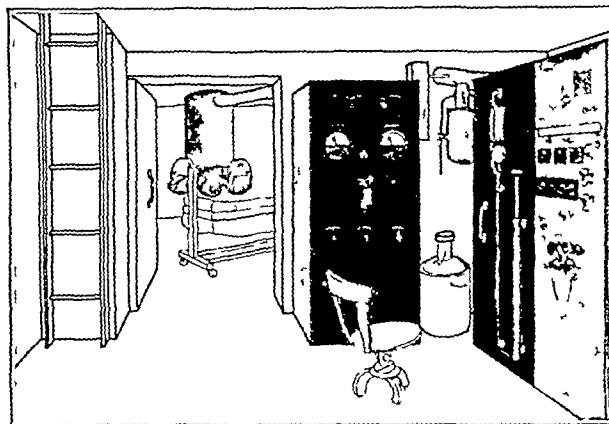


Fig 1—Control room of 600 kilovolt x ray tube, Soiland Clinic.

equivalent radiation energy is well within the cost range of certain standard hospital and clinical groups.

Experimental work on the higher voltages has been made possible through the courtesy of Dr Robert A. Millikan of the California Institute of Technology and his associate, Dr Charles C. Lauritsen, who designed and built the first high voltage tube some five years ago.

An opinion cannot yet be vouchsafed as to the ultimate clinical value of the Lauritsen tube. It is known that from the ordinary 200 kilovolts (peak voltage) a depth dose of approximately 38 per cent is obtained at a depth of 10 cm of tissue, so that the deep effect is obtained only at a tremendous expense of energy wasted in the first part of the volume under treatment, that is, the superficial structures.

With approximately 500 kilovolts on the tube, however, practically a 45 per cent depth dose is obtained at the level of 10 cm from the surface, thus opening up a field to high voltage roentgen therapy not hitherto obtained.

It is not my intention in this communication to suggest that the new high voltage roentgen tube will supplant radium. But it is possible, when its distribution has become more generalized, that it may supplant the use of the very large and expensive radium pack or radium gun, affording opportunity to convert the latter into highly filtered platinum needles or tube applicators for interstitial use. This type of treatment offers an entirely distinct and different field from that of external radiation. It is my opinion that in the near future radium will be employed largely for interstitial applications, and short wave x-rays for treatment from the exterior.

If the high voltage x-ray tube under discussion does nothing more than replace the expensive radium pack, it will have well served its purpose. Coincidentally, the price of radium may perchance be reduced to a point at which it can be obtained at a more reasonable price and thus made available to institutions and radiologists who have heretofore been deprived of its use.

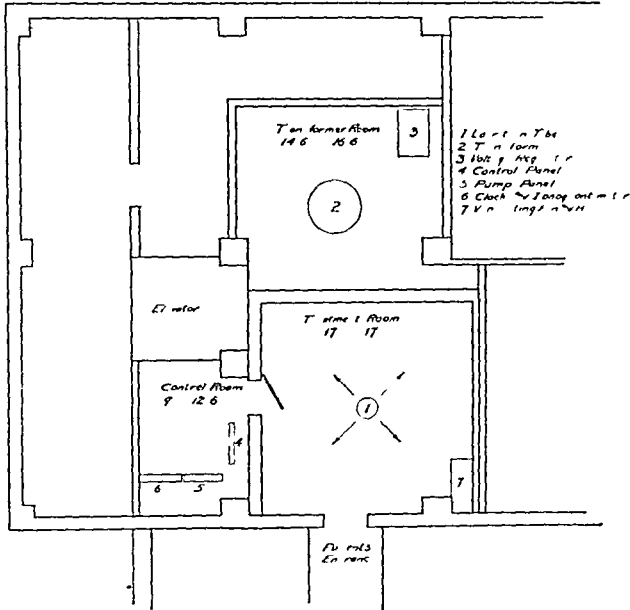
Patients from my clinic who have been submitted to the Lauritsen tube have, in some instances, shown interesting reactions. Some with extensive secondary carcinoma of the glands of the neck, primary in the

dose, and a 200 kilovolt tube with ordinary filtering can be raised from a 10 cm depth dose of 40 per cent to one of 48 per cent by changing from a 50 cm to a 100 cm skin target distance. Thus, although the proportion of the primary radiation which reaches this depth is very different in the two cases, unless intense γ -rays from the atomic nucleus are excited, no extreme gain in depth dose is to be expected by using very high voltage tubes. As to the biologic factors, no evidence is yet available for a very large intrinsic divergence between the effects of 200 kilovolt radiation and radium gamma rays, in other words, he concludes that it has not been demonstrated that biologic reactions will increase very greatly as the voltage is raised above 200 kilovolts. As Dr Tuve was the first man to work with extreme high voltage through a vacuum tube, his statements must be given respectful consideration.

Dr Failla of New York, physicist at the Memorial Hospital, has been operating a high voltage plant up to 750 kilowatts. From his rather guarded statements it would appear that no startling changes, either in clinical results or in biologic reactions, have been obtained. It seems however, that Dr Failla does believe there is a biologic change which increases in degree with the rise of the voltage.

From this it will be seen that Dr Tuve and Dr Failla hold somewhat opposite opinions on this point.

To Dr Lauritsen however, belongs the credit of being first in the field with a practical high voltage γ -ray tube, one of which to my knowledge, has functioned satisfactorily under a voltage of 1,200,000. It is this type of tube with which I am concerned in the



Lauritsen, therefore, the medical world is indebted for the development of the world's first practical therapeutic x-ray unit of more than one-half million volts a recent duplicate of which I am now operating in my own clinic for therapeutic purposes

The achievement of one million volts is but a beginning, according to Dr Lauritsen, and it is quite possible both electrically and architecturally, to construct a transformer and tube of almost unlimited voltage. What this may mean to medical practice of the future staggers the imagination. If time should demonstrate that its usefulness increases in proportion to its rise in voltage, a new field of endeavor will open for those men who have faith in radiology and who continue to labor earnestly to keep pace with each progressive step, and will mean much to an expectant public, which demands from these members and workers of the medical profession that they give to them and to the afflicted the fruit of their labors.

That my clinical associates and I have been permitted to take part in the high voltage research work is sincerely appreciated, and we are grateful to the officers and research workers of the California Institute of Technology for this privilege.

1407 South Hope Street

OVARIAN TUMORS ASSOCIATED WITH SECONDARY SEX CHANGES

GRANULOSA CELL CARCINOMA AND
ARRHENOBLASTOMA

EMIL NOVAK, M.D.
AND

J. HERMAN LONG, M.D.
BALTIMORE

In the past few years a new chapter in gynecologic pathology with important clinical correlations has been written in the description of a group of ovarian tumors capable of producing profound effects on the sex characters of the individual. The credit for this new chapter belongs to the German school, and especially to Robert Meyer.¹ Our incentive for bringing this subject before this section is the fact that American pathologists have not yet manifested any great interest in this group of tumors, which while rare are almost certainly much more common than published reports would seem to indicate.

The older concept that tumor cells are purely parasitic and nonfunctional has been quite thoroughly disproved in at least a certain group of neoplasms more particularly those which arise in the endocrine structures. Illustrations will at once suggest themselves. I need mention only the obvious functional role of the cells of the acidophilic pituitary adenomas in the production of acromegaly or gigantism, the remarkable syndrome shown by Cushing² to be associated with certain basophilic adenomas of the same gland, the striking changes in the sex characters produced by some suprarenal cortical lesions, the somewhat similar

syndrome seen with some pineal tumors and so on. As regards some tumors at least, therefore, there seems ample justification for the dictum enunciated many years ago by Bard,³ that "the neoplastic cells continue to produce their physiologic secretions" ("les cellules neoplastiques continuent a produire leurs secretions physiologiques"). I need hardly add that an extension of this dictum to tumors in general is clearly not justified by available evidence.

The classification and nomenclature of ovarian tumors have always been a *bête noire* to both gynecologists and pathologists, chiefly because of ignorance of their histogenesis, although recent years have added considerably to knowledge on this point. For this reason a resurvey of the older material of any laboratory is apt to yield as many treasures as a hunt through an ancient attic. We have recently been thus reappraising the ovarian tumors in our own laboratory and, among other things, we have uncovered a number of tumors belonging to the category indicated by the title of this paper.

GRANULOSA CELL TUMORS

Without reviewing the evolution of knowledge of this interesting group of tumors, suffice it to say that the granulosa cell tumors are now commonly accepted as arising from the early oophorogenic structures in the sex gland area. The embryology of the ovary has not yet been unshakably established, although the evidence seems to point more and more to the correctness of the view, championed by Fischel,⁷ that the real germinal epithelium of the ovary is derived from the mesenchyme of the sex gland anlage. This is contrary to the hitherto rather generally accepted idea that the follicular apparatus is the result of downgrowth of the germinal epithelium covering the ovary into the mesenchyme beneath, in the form of medullary cords and later Pfleger's tubules. In either event there is further differentiation of the cells of the sex cords into two types, one becoming the oogonia, the other the follicular epithelium, the latter grouping themselves around the egg cells to form the primordial follicles.

In this process, rests of granulosa cells (*granulosaballen*) may be left over and indeed, these rests may at times be seen in postnatal ovaries. It is from these rests that the granulosa cell tumors arise and not, as some formerly believed, from the granulosa of adult follicles. As Meyer has emphasized, the epithelium of the adult follicle is a satellite tissue, depending for its life on the life of the ovum, to which it appears to be physiologically subservient. Furthermore, the fact that these tumors commonly develop late in life when the follicular structures have almost or completely disappeared from the ovary would speak against an origin from the granulosa of the adult follicle. Finally, granulosa cell rests sometimes of considerable size have been demonstrated their structure suggesting their probable importance in the origin of these tumors.

The granulosa cell is a typically feminine cell producing the so-called female sex hormone (folliculin or theelin). It is not surprising therefore that the hormonal effects produced by tumors of this variety are along the lines of feminization with overaccrutation of certain female sex characters and functions.

The Brenner tumor by contrast appears to exert no endocrine effect whatsoever and this presumably is due to the fact that its origin is related to an early undif-

From the Gynecological Department, Johns Hopkins Medical School. Because of lack of space the article is abbreviated in *THE JOURNAL*. The complete article appears in the authors' reprint.

Read before the Section on Pathology and Physiology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

¹ Meyer, Robert. *Am J Obst & Gynec* 22: 697 (Nov.) 1931. (This paper gives references to all of the author's previous publications on the subject.)

² Cushing, Harvey. *Bull Johns Hopkins Hosp* 50: 137 (March) 1932.

³ Bard, quoted by Askanazy. *Zt chr f Kref'sfor ch* 9: 391 1910.
⁷ Fischel. *Zt chr f Anat u Entwicklungsge ch* 92: 34 1920.

ferentiated phase of development, the cells not functioning along either male or female lines. From such an early undifferentiated phase of the cells, likewise, there may arise still another type of tumor, the dysgerminoma (*grosscelliges carcinom, seminoma*), which likewise exerts no effect on sex characters. This last group is observed chiefly in persons with defective



Fig. 1—Folliculomatous or von Kahliden type of granulosa cell carcinoma (folliculoma ovary). Patient aged 65 with pseudomenstrual bleeding and hyperplasia of the endometrium (see fig. 2). This case has been previously reported by R. W. TeLinde (Am. J. Obst. & Gynec. 20: 552, 1930).

gonadal development, either male or female, so that it constitutes a rather characteristic tumor type in cryptorchids and pseudohermaphrodites. When dysgerminomas occur in pseudohermaphrodites, however, they are not to be interpreted as the cause of the intersexuality, in which respect they differ from still another group of tumors the arrhenoblastomas, to which reference will be made later and which may actually produce conditions of intersexuality.

To return to the granulosa cell tumors there is no doubt that they are far more frequent than the number of cases thus far reported would lead one to believe. Not many more than a hundred cases are now recorded, but a resurvey of the material in any laboratory would, if our own experience can be taken as a guide, disclose a great many more. In a recent restudy of our old material, we have already found no less than twenty-six cases of granulosa cell tumor, including those which we have had in more recent years, since we have learned to recognize such tumors more readily. In former years these tumors were classified variously under such heads as sarcoma, carcinoma and endothelioma. We shall not in this paper present any analysis of our cases, reserving this, with a fuller discussion of the general subject, for a later contribution.

These tumors may occur at any age, but are most common in women beyond the menopause. This lends support to the view that they can scarcely arise in the fully developed follicular apparatus, as Meyer has emphasized. When the tumors arise in elderly women, as they most often do, they produce a remarkable effect on the uterus through the endocrine action of the granulosa elements. The uterus becomes characteristically increased in size, and pseudomenstrual bleeding is noted, so that in some cases women far beyond the menopausal age exhibit an apparent reestablishment of the menstrual

function. This sequence must therefore be kept in mind as a possible explanation of postmenopausal hemorrhage. If, for example, diagnostic curetting in such cases shows no suggestion of malignancy, but on the other hand reveals a typical hyperplasia of the endometrium, the first thought should be of granulosa cell tumor of the ovary (fig. 2). Indeed, some German authors suggest that, even if no tumor of the ovary is palpable, laparotomy may nevertheless be advisable, so characteristic is the association of hyperplasia, periodic bleeding and granulosa cell tumor at this age.

The hyperplasia in such cases is unquestionably due to the excessive production of folliculin by the granulosa cells, just as hyperplasia in women of the reproductive age is due to hyperfolliculism. That this is true has been confirmed, in a few cases, by the estrus effects produced in castrated animals by implantation of bits of such tumors, as well as by studies on the hormones of the blood and urine.

In at least a few cases, granulosa cell tumors have occurred in young children, and, in these, the hormonal effects are even more remarkable. The hyperfeminizing influence of these neoplasms is shown by the fact that in young children precocious puberty and menstruation are produced, together with such secondary sex characters as mammary hypertrophy, the growth of genital and axillary hair, increased growth, the development of the typical feminine postpuberal contour and increased size of the uterus to or almost to puberal size. Three such cases have been hitherto described, and three more have been added by one of us (Novak) in a recent paper.⁸

Granulosa cell tumors are commonly unilateral, and they vary in size from that of a hickory nut to perhaps that of a grapefruit, though both smaller and larger tumors have been described. The surface is smooth,



Fig. 2—Typical hyperplasia of the endometrium from the case with an ovarian tumor shown in figure 1.

but the tumor may be somewhat lobulated. On section it is soft, sometimes granular, often with gelatinous areas, and, especially if the tumor is large, cystic cavities are seen, sometimes small, sometimes quite large.

The microscopic picture is variable, thus explaining the confusion in classification. Without reviewing the

whole question, two chief types can be distinguished. One of these is the folliculoid type (folliculoma) corresponding to the tumor originally described by von Kahliden and therefore commonly spoken of in the literature as the Kahliden type. In this there are large, well encapsulated collections of small round or polyhedral cells, morphologically resembling the normal granulosa cells, and showing somewhat similar growth character-

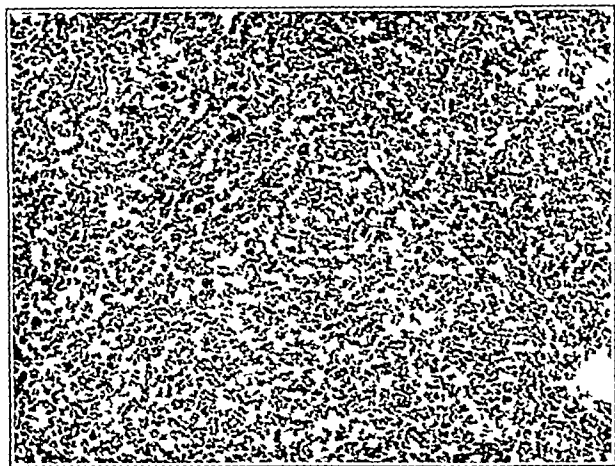


Fig 3—Granulosa cell carcinoma of diffuse variety

istics (figs 1 and 2). There is a tendency to the formation of tiny cystic cavities strongly suggestive of the so-called Call-Exner bodies so frequently seen in the granulosa of various animals, especially the rabbit. More extensive cystic areas are also frequently seen. The radiating growth tendency of the granulosa epithelium is well shown in the smaller cystic areas, for the cells are placed radially about these. Around the folliculomatous nests there is often a theca-like layer of connective tissue, so that the suggestion of a follicle-like structure is all the stronger, and it was this which led to the former view that these tumors arise from fully developed follicles of the ovary.

Much more common than the folliculoid type is the group which collectively may be spoken of as the non-folliculoid, although various subdivisions have been made (fig 3). Division cannot be made sharply, however, for different pictures may be encountered in different parts of the same tumor. In some cases there is a typical sarcoma-like appearance, and, at times, such areas cannot be distinguished from sarcoma (fig 4). In practically all cases, however, there is evident a tendency for the cells to arrange themselves in cords or tiny follicle-like nests. Often the granulosa cells are divided into long cylindric masses by numerous hyalinized trabeculae of connective tissue producing the cylindromatous type of tumor (fig 5). The cells usually show little evidence of anaplasia, though in some cases this is present. The tumors are as a rule quite vascular. In some instances, as already stated, typically sarcomatous areas are observed, which is not surprising if, as is now the trend, one accepts the view that the granulosa is of mesenchymal origin. The recent work of Fischel has yielded strong evidence of the probable correctness of this view as will be discussed later in this paper. On this basis certain sarcomatous tumors of the ovary may even be expected to exert female hormonal effects.

I have said nothing as yet as to the degree of malignancy of this group of tumors, and have thus far avoided the term granulosa cell carcinoma, by which they are most often designated in the literature. As a matter of fact, the degree of malignancy is in most instances very low, and recurrences are exceptional, even after removal of only the affected ovary. In some cases of this type it would seem better, especially in view of the absence of microscopic malignancy characteristics of the tumor cells, to speak of such tumors as granulosa cell adenomas, using the term adenoma in the broad sense in which it has been adopted for "adenomas" of other endocrine structures, such as the pituitary and the suprarenal glands.

In a certain proportion of reported cases, however, the tumors have run a distinctly and at times extremely malignant course, with recurrence, metastasis and death. Such a course has been noted in between 5 and 10 per cent of the reported cases. An instance of this sort has been only recently reported by Soltmann, and we have recently had one such malignant tumor in our own laboratory. This case will be reported in the near future by Dr. James N. Brawer. To judge from this single experience, however, the microscopic appearance in the malignant cases may differ definitely from that in the more common ones of more favorable type, for in our case there were obvious microscopic evidences of malignancy in the cell characteristics of the tumor. For such tumors the designation of granulosa cell carcinoma would be proper on both microscopic and clinical grounds.

ARRHENOBLASTOMAS

Much less common, but perhaps even more interesting, is a group of tumors which at times produces effects on sex characters almost diametrically the opposite of those resulting from granulosa cell tumors. Whereas the latter exert a hyperfeminizing influence, the others have a defeminizing or masculinizing effect. Before

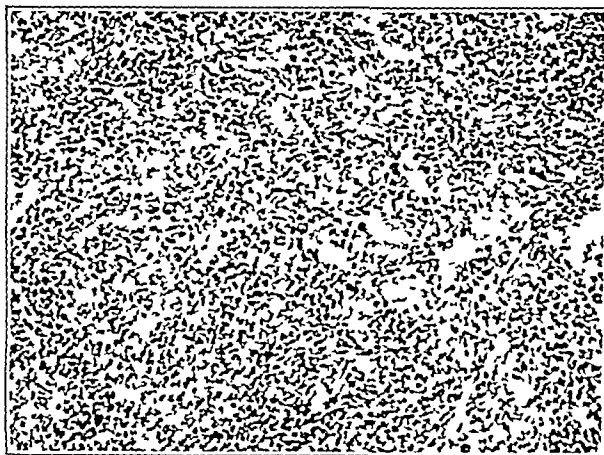


Fig 4—Sarcoma like picture often seen in granulosa-cell carcinoma. Other areas in this same tumor show a much more typical structure.

discussing this group of tumors, a brief reference to the embryology of the ovary and to the factors concerned in sex differentiation seems indispensable.

Factors Concerned in Sex Differentiation—There is no more fascinating problem than that of the differentiation of the two sexes. That the sex of the offspring is determined by the chromosomal variations of the germ cells, more particularly those of the spermatozoon,

is now generally accepted. The presence of the single X chromosome on the one hand, or of the two X chromosomes on the other, apparently determines the male or female direction of zygotic development. In addition to this, biologists are coming to believe that the balance between the sex chromosomes and the autosomes is of great importance as well.

In the differentiation of the characters which are commonly associated with maleness or femaleness, however, the problem extends itself in a broad and as yet somewhat confusing way. Indeed, it involves such an extensive knowledge of biology as to put it beyond the ken of most medical men. And yet from this confusing mass of biologic knowledge certain simple facts appear to be crystallizing out, and many of them are of importance to the pathologist and the endocrinologist.

When one thinks of a male human being one visualizes a person with certain characteristic sex attributes, not only of external and internal genitalia, but also of body contour, distribution of hair, voice and the like. Similarly, the female connotes in one's mind certain fairly well defined "feminine" attributes. Are these



Fig. 5—Cylindromatous pattern common in granulosa cell carcinoma, and due to trabeculation by hyalinized connective tissue.

all to be explained by the initial impulse emanating from the male or the female zygote? The evidence is clear that in the higher forms this is not the case. In the case of certain lower forms, such as the insects, it seems to be true that the germ cell impulse is the all-important one. But in the higher forms and especially in the vertebrates, this initial zygotic impulse certainly cannot be so completely dominant, as shown by the variations of sex characters produced by castration, experiments on parabiosis or certain tumors of the endocrine glands.

Is a female, therefore, a person with a primarily female zygote, one with an ovary, or one with the physical and psychic characters which one associates with woman? Studies in intersexuality have shown that female external characters may dominate when the only gonad present is a testis, with no ovarian tissue at all. This is a clear refutation of Virchow's dictum that "solely on account of the ovary, woman is what she is" (*Propter ovarium solum mulier est quod est*).⁹

There is no longer any question that the endocrine glands constitute the immediate force behind the differentiation of the characteristic attributes of the two sexes. A wealth of biologic observations in many species sup-

ports this statement. The most important of the earlier observations on this point were those of Lillie⁹ in 1916. In cases of twin pregnancy in cattle, when one twin is male and the other female, the latter develops intersexual characters because of the early anastomosis between the circulations of the two twins. The studies of these intersexual twins, or "free martins," have been followed by numerous observations on other species. In certain toads, which are characteristically hermaphroditic, it is possible to produce development along either male or female lines by artificial means, such as variations in temperature.

It would lead us too far afield to adduce other observations indicating the importance of the endocrine glands in the differentiation of sex, but one more example will be cited because of its pertinence to our immediate subject. In fowls, which characteristically possess one active gonad, the other remaining rudimentary, it has been found that removal or destructive disease of the active ovary may be followed by active development of the rudimentary gonad, but along testicular or male lines. There is thus produced a complete reversal of sex characters, so that, as in the case of Crew,¹⁰ a hen which had been the mother of many chicks later grew a comb, developed other male characters, and even became the father of other chicks. Minor degrees of this intersexuality of fowls explain the phenomena of "crowing hens" and "egg-laying" roosters. For the reader interested in further observations of this sort, reference may be made to the book recently published by Allen, "Sex and Internal Secretions,"¹¹ and especially the chapters by Witschi, Danforth and Lillie.

Each zygote, therefore, is primarily bisexual, so that in each woman there are rudimentary homologues of many male structures, and vice versa. Of these the one which most concerns us now is the rete ovarii, which is not a mere analogue, but the actual homologue of the male testis. To put it another way, every woman shelters within the medulla of the ovary a potential testis. Under certain conditions this undifferentiated male tissue may become active, and its male endocrine influence may override the primary female tendency, with the production of various degrees of intersexuality. Thus, at any rate, is the point of view supported by most of the available evidence, so that I shall not discuss other theories, such as that of Halban,¹² who believes that the zygote is primarily male, female or hermaphroditic, and that the gonads exercise only a "protective" and not a "formative" influence in sex differentiation.

To summarize, therefore, the primary sex differentiating force originates from the zygote produced by the union of the male and female germ cells or gametes. In the higher forms, however, this can be modified or overridden by the endocrine influence of the gonads and other affiliated glands. It should be added that the zygotic influence is believed to determine whether the gonad is to be an ovary or a testis, so that, in the final analysis, a single motivating force is behind the whole differentiating process. With this briefly sketched review of the factors concerned in the differentiation of sex characters, we can more intelligently discuss the second group of ovarian tumors, associated as it is with modifications of sex character.

9 Lillie Science 43 611 1916
10 Crew Proc Roy Soc London B 95 256 1923
11 Allen Edgar Sex and Internal Secretions Baltimore Williams & Wilkins Company 1932
12 Halban J Arch f Gynak 130 415 1927

Arrhenoblastoma of the Ovary—In 1905, Pick¹³ described a tumor of the ovary made up of convoluted tubules resembling the seminiferous tubules of the testis, and he therefore designated this tumor as adenoma testiculare (tubulare) ovarii. A second case of the same type was described in 1907 by Schickele,¹⁴ who accepted Pick's view that the tumor formation occurred in the testicular portion of an ovotestis. This view was held in spite of the fact that neither patient had previously exhibited any hermaphroditic manifestations. Other tumors which were later reported by Neumann¹⁵ and Meyer¹⁶ presented a more atypical testicular pattern, and to these Meyer applied the name "adenoma testiculare ovarii partim carcinomatosum."

Only a small group of cases of the type of Pick's "adenoma tubulare testicularis" have been observed, and in only about one-third is there any clinical evidence of an influence on sex characters. There are other types, however, which exhibit a much more atypical and, in some cases, sarcoma-like pattern, instead of the mature testicular tubules characterizing the typical testicular adenoma of Pick. In this atypical variety manifestations of defeminization or masculinization of the patient are the rule. An intermediate form has been shown by Meyer to exhibit an intermediate degree of effect on sex characters. It may at first seem strange that sex changes are found so much less frequently with tumors made up of fairly mature testicular tissue than those in which the testicular tissue is extremely undifferentiated, unless one stops to think that in some cases of pseudohermaphroditism, in which the secondary sex characters are altogether female, the only gonads present are testes and not ovaries.

The histogenesis of these tumors, according to Meyer, is to be sought in certain undifferentiated cells persisting in the rete, and capable of later function along either male or female lines. The masculinizing group of tumors, or arrhenoblastomas, develop in the potentially testicular cells present in the rete ovarii, and through their hormonal effects override the feminine influence of the ovary.

Meyer's explanation appears to have been rather widely accepted, although, until more is known concerning the factors involved in normal and abnormal sex differentiation it must be looked on as an excellent working hypothesis rather than as a demonstrated fact. A point which, it seems to us, has not been sufficiently stressed is the fact that the medulla of the gonad is a determiner of masculinity and the cortex of femininity of their contained germ cells. This observation, championed especially by Witschi, is based on excellent biologic evidence. It is therefore not surprising that tumors arising in the ovarian medulla should exert a masculinizing influence. Incidentally, it is suggestive that cortical tumors of the suprarenal gland, which embryologically is so closely associated with the ovarian medulla characteristically produce syndromes similar to those seen with arrhenoblastomas.

The clinical manifestations of these tumors vary according to the degree of their masculinizing hormonal influence and this in turn appears to be a reflection of the degree of undifferentiation of the tumor cells. In the most extreme cases the woman who has previously been of normal feminine type becomes amenorrheic the

breasts flatten and atrophy, a heavy growth of hair appears over the face, chest, abdomen and lower extremities, the figure loses its normal feminine curves and assumes the typically more angular contour of the male, and the voice becomes much deeper, owing to laryngeal hypertrophy. The clitoris may show such hypertrophy as to be almost penis-like in its proportions.

Such symptoms, occurring in a patient who has developed an ovarian tumor, should lead to the suspicion that one is dealing with an arrhenoblastoma. Removal of the tumor leads to a regression of the symptoms, thus establishing its causative role. In at least one reported case, that of Kleinhans,¹⁷ such a syndrome was noted, and, further to establish the direct hormonal influence of these tumors, a reappearance of the symptoms was observed when a similar tumor recurred in the other ovary. Certain of the symptoms, it is true, may persist for a long time after operation, such as the hypertrophy of the clitoris, but in all reported cases the refeminization of the patient has been so striking as to leave no doubt as to the role played by the tumor.

In tumors of the intermediate type, of which a considerable group have been observed, the symptoms are

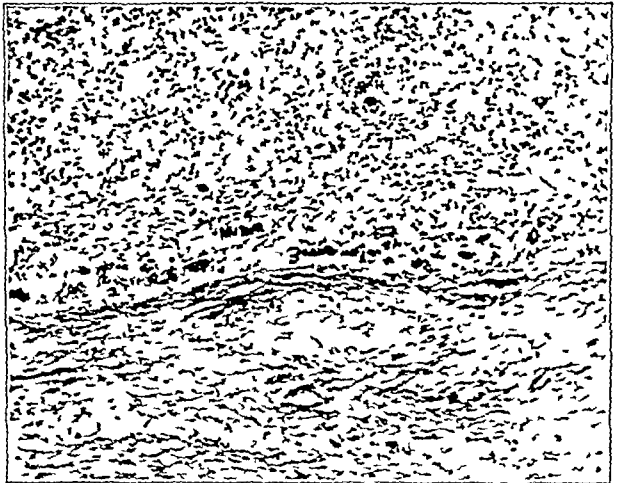


Fig 6—Arrhenoblastoma from the case reported by Taylor, Wolfemann and Krock, who allowed us to use this tissue for study, and gave us permission to use this photomicrograph. This patient showed amenorrhea, flattening of the breasts, striking masculine hirsutism with a heavy growth of beard, the development of masculine body contour, a deepening of the voice and marked hypertrophy of the clitoris.

much less marked. In some instances only amenorrhea may be noted, in others, amenorrhea with more or less hypertrichosis, and so on, depending on the intensity of the hormonal effects of the tumor.

Tumors of this general group are usually unilateral, and, like most tumors of this embryonic group, are of a relatively low degree of malignancy. They are commonly of moderate size, ovoid and perhaps lobulated, of soft consistency, and not infrequently of yellowish color on section.

The microscopic pattern is variable so that in former years they were classified under various designations, such as sarcoma, carcinoma or endothelioma. As already stated the typical testicular adenoma of Pick is an adenomatous structure made up of convoluted tubules. At the other extreme in the markedly atypical variety there may be little to suggest an origin from the same Anlage for in many places the structure is indistin-

13 Pick, Berl. Klin. Wchnschr. 17: 502, 1905.
14 Schickele, C. Beitr. z. Geburtsh. u. Gynäk. 11: 26, 1906.
15 Neumann, H. O. Arch. f. Gynäk. 126: 55, 1925.
16 Meyer, Robert. Ztschr. f. Geburtsh. u. Gynäk. 98: 1-9, 1920.

17 Kleinhans, cited by Wagner. Ztschr. f. Geburtsh. u. Gynäk. 98: 134, 1920.

guishable from a sarcoma. If a sufficient number of blocks are studied, one can always find a suggestion of tubular or strandlike arrangement of the cells, often suggesting the sex cords of early gonadal development. The cells themselves are most often rather spindle-shaped. In a number of instances another type of cells has been found scattered throughout the tumor, and these cells have been interpreted as interstitial cells.



Fig 7—Arrhenoblastoma of intermediate variety associated with amenorrhea, hypertrophy of the clitoris and deepening of the voice (see text)

In tumors of this general type, it is of the greatest importance to study tissue from all parts of the tumor, for the structure varies in different areas, and the real nature of the tumor may be overlooked unless the study is sufficiently thorough.

It may again be stressed that the pseudohermaphroditic symptoms which may be associated with these tumors are actually produced by them, for the patients are normal until the development of the tumor, and the pseudohermaphroditic symptoms disappear after removal of the tumors. In this respect these growths are quite different from the disgerminomas, which likewise may occur in pseudohermaphrodites, but which have nothing to do with the production of the bisexual condition.

While in this paper we have stressed particularly Meyer's explanation of the masculinizing tendencies of these tumors, it cannot yet be assumed that it is the correct one. The problem will not be solved until many more cases have been carefully studied, and until more is known concerning the mechanism of sex differentiation and the causes of intersexuality. The fact that suprarenal tumors may likewise produce masculinization phenomena makes the study of cortico-ovarian interrelations one of great importance in the elucidation of these problems. The fact that ovarian tumors of types other than those discussed in this paper have appeared at times to produce similar manifestations must also be explained. The great value of Meyer's contributions is in having called attention to this rare but biologically important group of tumors, and in having offered what appeared to be an excellent working theory of their histogenesis and their pathologic physiology.

Only a small group of these tumors, twenty-eight of all three grades, has been reported, but with the newer interest in the syndrome, there is little doubt that the

number will be rather rapidly augmented. So far as we know, only four cases have thus far been noted in the literature of this country. The first appears to have been that of Moots,¹⁸ in 1921. The pathologic diagnosis in this case was "fibroblastic sarcoma of embryonic testis, possibly of ovotestis." The photomicrographs and the description of the microscopic findings leave no doubt as to the propriety of including the tumor in the group of arrhenoblastomas, and the clinical picture was equally typical, the patient developing amenorrhea, hypertrichosis, a deep voice and enlargement of the clitoris. All of these manifestations regressed after removal of the tumor of the left ovary.

Popoff's case (1930)¹⁹ was reported as a testicular tubular adenoma of the ovary, and Meyer has since then included it in the intermediate variety of arrhenoblastoma, although amenorrhea alone was apparently the conspicuous symptom, without the masculinization manifestations seen with the more atypical tumors. A third case has recently been reported by Spielman,²⁰ and is likewise to be classed as of the intermediate grade. The fourth case has been observed by Taylor, Wolfemann and Krock,²¹ and has just been published. Through the kindness of Dr. Krock, we were able to study tissue from this tumor (fig 6), and sections were likewise examined by Prof. Robert Meyer, who concurred in the diagnosis. Dr. Krock has also permitted us to include in this paper an illustration of the characteristic microscopic picture. The tumor in this case is obviously of an atypical variety, and hence, as might be expected, the symptoms of masculinization were of high grade.

We are able to add a fourth case discovered in our search through our old material. Such retrospective study of cases is not nearly as satisfactory as might be wished, for the histories of many years ago, apart from incompleteness in other respects, took little cogni-

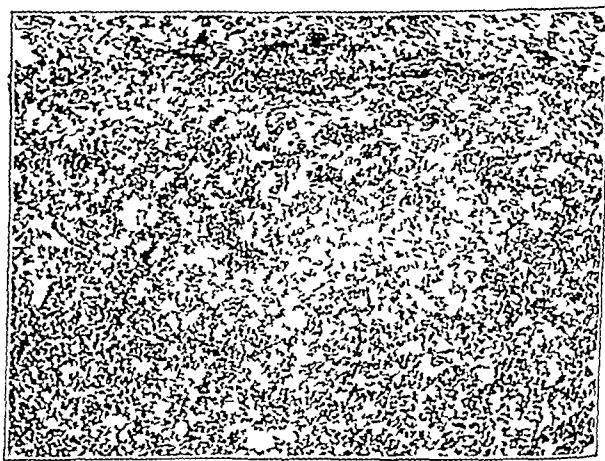


Fig 8—Another area in the same tumor showing a sarcoma like picture with numerous cordlike groups of cells reminiscent of the early sex cords.

zance of endocrine manifestations, which in more recent years would have excited interest and comment. Furthermore, the original tissue is often unavailable for more extensive study, as in this instance. Our case,

18 Moots C W. Am J Obst & Gynec 1:864 (May) 1921.
19 Popoff N W. Testicular Tubular Adenoma of the Ovary. II. Etiologic Relation to Embryonic Vestiges and Spontaneous Sex Reversal of the Female Gonads. Arch Path 9:51 (Jan pt 1) 1930.
20 Spielman Frank. Am J Obst & Gynec 25:517 (April) 1933.
21 Taylor J M, Wolfemann S J and Krock F. Surg Gynec & Obst 56:1040 (June) 1933.

which will be more fully reported later, was that of a patient, aged 20, who was operated on in 1898 for a rather large abdominal tumor of long duration. She had not begun to menstruate until the age of 18, when two normal periods occurred, about one month apart. There had then been amenorrhea for thirteen months, at which time (July, 1898) a scanty period had occurred. Following this there was again complete amenorrhea until she entered the hospital in October. Her voice was described as "harsh and rough," and the clitoris is said to have been markedly hypertrophied. Unfortunately, no note was made of the distribution of hair.

The operation revealed a tumor of the left ovary, which was later diagnosed as an adenocarcinoma. Our recent reexamination convinces us, however, that the tumor belongs to the group of arrhenoblastomas. In some areas a definite tubular structure is preserved, while in others the tumor presents a fairly typical picture of sarcoma as will be seen from figures 7 and 8.

Following the operation, regular menstruation occurred in December, January and February, but in the latter month examination showed recurrence of the tumor, with pain, ascites and emaciation. At a second exploratory operation, the condition was considered hopeless, and only a biopsy of the recurrent tumor was done, with evacuation of the ascitic fluid. The patient declined rapidly, being discharged from the hospital on March 28, presumably to die. The rapid recurrence of the tumor in this case is in contrast with the low degree of malignancy noted in most cases, and is perhaps explainable by the long duration of the disease before the patient came under observation.

SUMMARY

The observations in this paper are based on the study of material from twenty-six cases of granulosa cell ovarian tumors and two cases of arrhenoblastoma, together with a number of other cases of other tumors of this embryonic class particularly dysgerminoma (seminoma) and the so-called Brenner tumor (oophoroma folliculare). The especial points stressed have been (1) the feminizing tendency of the granulosa cell group, dependent on the production of folliculin by the constituent cells, and (2) the defeminizing and masculinizing tendencies of the arrhenoblastomas. The latter capacity is believed to be due to the origin of the tumors from certain undifferentiated cells in the region of the rete ovarii, which is the female homologue of the testis. The intersexual phenomena which may be brought about by these rare tumors are of great biologic interest, especially as they are not unlike the phenomena which may be observed with certain lesions of the suprarenal cortex. An additional case of arrhenoblastoma is reported, and there is a brief discussion of the factors concerned in sex differentiation, for without some knowledge of this still somewhat nebulous subject the pathologic physiology of these tumors cannot be intelligently studied.

ABSTRACT OF DISCUSSION

DR RICHARD W. TELINDE, Baltimore. Knowledge of the histogenesis of some of the rarer types of ovarian tumors has come about from the fact that they are composed of tissues which are active from an endocrine point of view or that they are acted on by the endocrine secretion of other glands. For instance it is concluded that the so-called chocolate cysts of the ovary are histogenically related to endometrial tissue because

they respond to the ovarian hormones similarly to the endometrium in the uterus. As to the origin of the masculinizing and feminizing tumors described by the authors is obtained from the fact that they apparently produce a hormone secretion that influences the genital organs themselves and changes the secondary sexual characteristics of the individual. The more common tumors such as cystomas and cystadenomas are silent from an endocrine functional point of view and hence practically nothing of their histogenesis is known. As has been suggested, these feminizing and masculinizing tumors are not as rare as heretofore believed. I saw three granulosa cell tumors in the course of one year. A better idea of the histogenesis of these tumors may be obtained from studying the early cases rather than the late ones. A few years ago I found a very small but typical granulosa cell tumor, only about 3 mm in diameter, in the hilus of the ovary. Adult follicles do not normally occur in the hilus of the ovary, but this part of the ovary is a hot bed of embryonal rests. Therefore, the finding of this small tumor in this position would seem to indicate strongly its origin from an embryonal rest of granulosa cells rather than the adult follicle. Dr Novak spoke of the work of Fischel on the embryology of the ovary in which he concludes that the follicular epithelium of the ovary is derived from the mesenchyme of the primordial sex gland. Further support of this view is suggested by the fact that certain tumors which histologically appear sarcomatous have the same feminizing effect as the granulosa cell tumors. A sarcoma of the ovary was removed from a 13 year old child who showed excessive development of the breasts and pubic hair and a uterus as large as an adult's. She bled approximately half the time since the onset of her menses at 11, and curetting showed hyperplastic endometrium. Removal of the tumor caused the patient's menses to become regular in tempo and duration.

DR FRED KROCK, Fort Smith, Ark. The origin of the causative factors for the development of the secondary sexual characteristics of the body is probably exceedingly complex. Extragonadal tumors, such as the basophilic adenomas of the pituitary, and carcinomas of the suprarenal cortex, have been shown to effect such changes even in the adult, with the gonads playing a secondary role. Each of the two types of functioning ovarian tumors presented by the authors is undoubtedly exposed to the same hormones from presumably normal pituitary, suprarenal and other endocrine glands, with excessive femininity, precocity or rejuvenation resulting in the cases of granulosa cell carcinomas and a defeminization and masculinization with the arrhenoblastomas. These changes are apparently due to the carrying over of the physiologic activity of the tissue from which the tumor is derived into the tumor itself. The interstitial cells of the testis which embryologically are modified connective tissue cells, are considered to be responsible for the development of the secondary sexual characteristics of the male. It has been observed that the atypical type of arrhenoblastoma which morphologically is predominantly sarcomatous exhibits clinically the most marked and constant masculinization. On the other hand pure ovarian sarcomas, which occur not uncommonly, have never been observed to have been associated with changes in the secondary sexual characteristics. It is therefore tenable that these changes are due in the arrhenoblastomas to the elaboration of a large amount of this male growth directing hormone by what are potentially interstitial cells or their anlagen modified by neoplastic development. In the case recently reported by Taylor, Wolferman and Krock, three competent pathologists made the diagnosis of sarcoma of the ovary before further study. Verified by Meyer demonstrated epithelial testicular elements in the tumor. The patient experienced a complete return to normal femininity after operation. Fifteen months later recurrent nodules removed from the omentum showed on section spindle cell sarcoma and areas of cartilage like tissue. This brings up the question as to whether or not arrhenoblastoma of the ovary is a pathologic entity or whether it is merely a modified teratoma in which growth of functioning sex-directing cells has taken place at the expense of the other tissue elements usually found in these tumors. It also shows that these tumors are more malignant than is usually considered.

DR. EMIL NOVAK, Baltimore. I am glad that Dr. Krock brought up the question of sex differentiation, which I have discussed quite fully in the paper, although I had not time for this in the short summary which I had presented. There is no question as to the importance of the role played by the endocrines in the higher forms of animal life, although the primary impulse toward differentiation along male or female lines undoubtedly emanates from the germ cell itself. In the discussion of the pathologic physiology of these tumors I presented particularly the view advocated by Meyer, but knowledge of the whole subject is still so incomplete that this view is not to be accepted too wholeheartedly as yet. However, it does constitute by far the most acceptable working hypothesis available.

A PLASTIC OPERATION FOR CERTAIN TYPES OF HEMORRHOIDS

W. A. FANSLER, M.D.
AND
JAMES K. ANDERSON, M.D.
MINNEAPOLIS

If hemorrhoidectomies are to be done with uniformly good results, the method of procedure must be varied to suit the condition that presents itself. No one operation is equally satisfactory for all cases. This procedure is suggested for a certain type of case, namely,

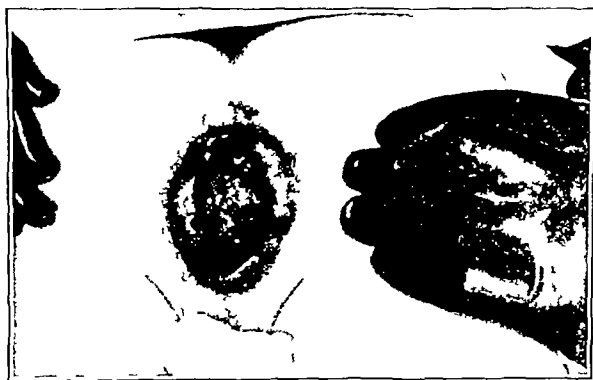


Fig 1—Prolapsed ring of thrombotic internal hemorrhoids with thrombosis of anal and external hemorrhoids and eversion of anal canal

that in which there is a complete prolapse and thrombosis of the entire ring of internal, anal and external hemorrhoidal vessels (fig 1). This condition presents itself as a bluish doughnut-like ring surrounding the anal opening, the doughnut being covered by the prolapsed anal mucosa and perianal skin, which of course, is squamous in character. Inside this "doughnut" are several prolapsed and thrombotic internal hemorrhoids covered with a moist columnar type of rectal mucosa. A definite constriction or sulcus separates these two protuberances. This sulcus is the pectinate line and represents the upper limit of the anal canal when the anal mucosa is in its normal position.

If this entire prolapsed mass is removed, the victim is left with an anal canal lined with rectal mucosa which secretes mucus so that he will have a moist anus with excoriation of the perianal skin and soiling of his underwear for the rest of his life. This postoperative condition has been termed by Dr. Dudley Smith of San Francisco the Whitehead deformity. It is with the idea of preventing this deformity and its attendant

inconveniences that the procedure presented here was evolved. The purpose of the operation is to remove the thrombotic and varicose hemorrhoidal vessels and to restore the normal lining and appearance of the anal canal. The basic principle involved is developed from

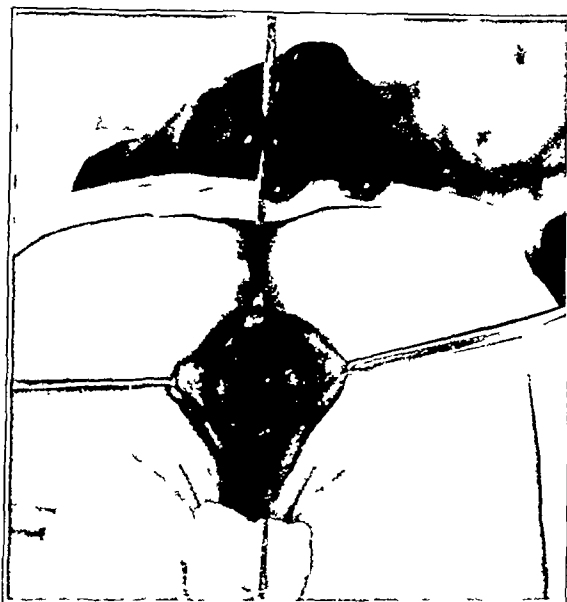


Fig 2—Anal canal retracted exposing junction of squamous and columnar epithelium (the pectinate line)

the true Whitehead operation, as is likewise the "amputative operation" done by Dr. L. A. Buie.

Any type of anesthesia may be used, though our preference in the majority of cases is spinal, produced

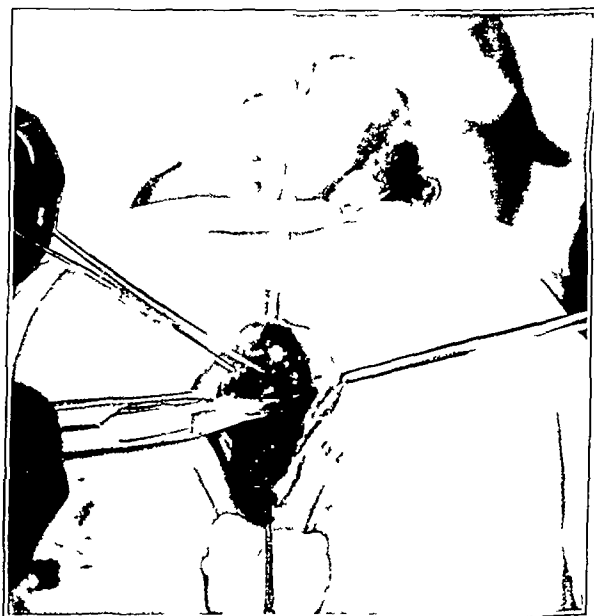


Fig 3—Line of incision completely round the pectinate line

by the use of from 35 to 50 mg. of procaine hydrochloride dissolved in from 1 to 15 cc. of spinal fluid. The patient is placed on the table face downward with the hips elevated either by the use of a hard roll of blankets or a mechanical elevator, if one is available. The field is cleansed with 50 per cent alcohol. The

outer ring is retracted and the sulcus dividing the squamous from the columnar epithelium exposed (fig 2). The internal portion of one of the hemorrhoids is grasped and an incision made at the juncture of the two types of mucosa (figs 3 and 4). The outer margin of the incision is grasped with Allis forceps and the mucosa and skin dissected outward as far as the normal skin. This leaves a long flap of free anal mucosa and skin. On the internal portion of the hemorrhoid the thrombotic tissue is dissected upward as far as the margin of normal mucosa. This tissue is removed. All other thrombotic vessels are now dissected out until the sphincters are exposed. This process is repeated around the entire anal circumference. When it has been completed, the anus is surrounded by several flaps of skin which are attached at their outer borders, and an inner ring of normal rectal mucosa presents itself at the lower margin of the anal canal. Any spurting vessels appearing during the operation are



Fig 4—Anal mucosa retracted and all thrombotic vessels dissected away from it

ligated with plain 00 catgut though, as a matter of fact, there is surprisingly little bleeding.

The rectal mucosa is allowed to retract and a Fansler operating speculum is inserted into the anus. Two sutures of 00 chromic catgut are passed through the outer margin of one of the skin flaps and needles are left on the sutures. The rectal mucosa is grasped with Allis forceps at a point directly internal to the anal flap. The sutures attached to the skin flap are now passed through the rectal mucosa and a portion of the rectal wall at a point representing the normal anorectal margin. These sutures are then tied, this portion of the anal canal being thus restored to its normal state (fig 5). The same process is repeated about the rest of the anal canal, usually four or five flaps being utilized to complete the procedure. The completed operation shows a normal appearing anus except for four or five lines of incision (fig 6).

The patient usually leaves the hospital in six or seven days. After healing it is almost impossible to tell that

any operative procedure has been done. The only difficulty encountered is when a skin flap fails to adhere and everts down. In this case it should be excised or a permanent skin tab will result. In case all the flaps

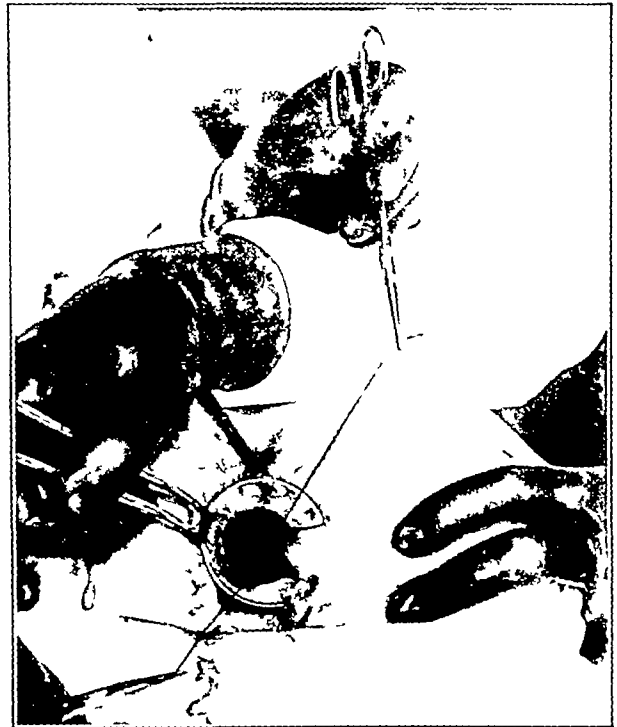


Fig 5—Restoration of a flap of anal mucosa to its normal position

should loosen, it would be necessary to do a secondary replacement, otherwise a stricture might result. I believe that the use of chromic gut obviates this danger, for in our series of cases this has never happened, though in one case one flap did not adhere and was

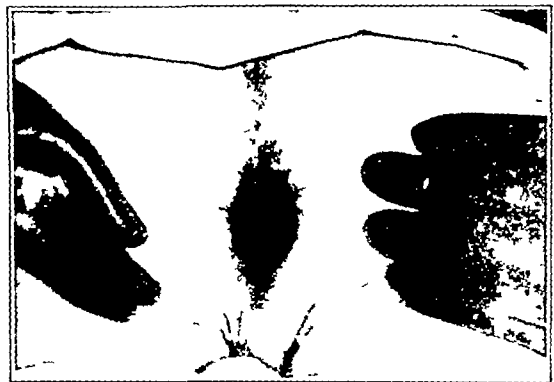


Fig 6—All flaps of anal mucosa restored. Operation completed

excised. I believe that in this type of case several flaps are better than a continuous suturing of the entire circumference of the anal and rectal mucosa, because there is room for drainage between the flaps for whatever infection that may develop. Also it allows for drainage or any oozing so that no large hematoma may form and it permits the removal of any redundant folds or tabs of mucosa, thus insuring a better cosmetic result.

74 South Ninth Street

ABSTRACT OF DISCUSSION

DR CLEMENT L. MARTIN Chicago To attempt to discuss an operation one has never done nor even seen performed offers certain difficulties. A priori, the operation is logical and is based on sound anatomic and surgical principles. Except for the radiating linear skin incisions, it is the same in effect as the Whitehead operation. That it might be followed in the occasional instance by some degree of stricture at the line of suture where skin is joined to the mucosa strikes me as a possibility. The case of separation and retraction of a skin flap mentioned by the authors indicates another possible source of trouble. However, one is justified in assuming some risk to cure the type of cases in which the authors advocate the operation. The group is a difficult one seen more frequently in the dispensary and charitable institution work, the severe cases of prolapsed generally thrombotic internal hemorrhoids with a veritable collar of skin around them, often with a ring of varices lying underneath that skin and at times with edema and inflammation of the skin. They present a real surgical problem and I hope that the procedure may make my own tasks less difficult. That no single type of hemorrhoidectomy is applicable to all cases should be much more generally understood.

DR LOUIS J. HIRSCHMAN Detroit The authors have devised an operation which will save a great deal of that valuable covering which in the minds of many people, seems to be the principal part of the hemorrhoid. Too often in the removal of hemorrhoids the surgeon has removed everything that he can see protruding or which seems enlarged and as a consequence, many hemorrhoidectomies resolve themselves into removal of large masses of perfectly innocent and healthy skin and mucous membrane while the essential pathologic condition, namely, the diseased veins is left behind. This operation differs from the Whitehead operation as it is performed by many surgeons. The results of these present themselves for correction later. Most of the Whitehead deformities that I see are evidenced by eversion of mucous membrane due to the fact that too much skin has been taken away. With the operation described by Drs. Fansler and Anderson much of that has been avoided. I believe with Dr. Clement Martin that in occasional instance of annular contraction may occur where the flaps are sewed to the mucous membrane. One can avoid this complication by not separating the skin from the mucous membrane but by making three elliptic flaps estimating beforehand the amount of tissue to be removed to allow a sufficiently wide isthmus in the three instances between the flaps. This will completely restore the normal caliber of the bowel. These isthmuses are composed of skin and mucous membrane. To dispose of the varicosities or thromboses, which make up a large part of the bulk of the large, rolled out "doughnuts," one can remove all pathologic tissues between the skin, mucous membrane and sphincter, and leave the membrane intact. As the wound heals, there may be a little redundant skin at the outside, which may have to be removed later but there is no danger of a stricture because there has been no separation of the continuity of skin and mucous membrane.

DR W. A. FANSLER Minneapolis I was interested in what Dr. Hirschman said about leaving the islands of skin and then undercutting them. I learned this from Dr. Hirschman several years ago and have employed it many times but I do not feel that it serves the purpose in this type of case. I have had no trouble so far with strictures forming in these cases. The reason I divide the mucous membrane of the anus from that of the rectum is that it does not leave any skin tags on the outside. The most common site for strictures following operations about the rectum is in the anal canal. I think it is seldom that one encounters a stricture of the rectum itself following operations. In the operation described in this paper if one uses long flaps of skin and stitches their upper margins well above the upper end of the anal canal and into the rectum itself, one will avoid stricture.

The Drop in Diabetic Coma—Who would have believed that mortality from diabetic coma would drop from 60 per cent to 5 per cent in seventeen years? Arteriosclerosis now causes more than half of all diabetic deaths—Joslin, E. P. *New England J. Med.* 209 519 (Sept. 14) 1933

Clinical Notes, Suggestions and
New Instruments

A UNIVERSAL BONE RONGEUR

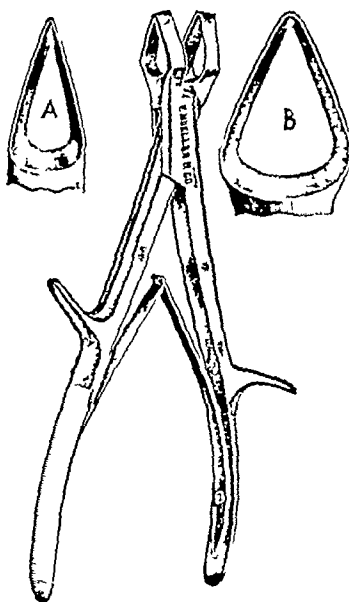
PHILIP LEWIS, M.D., CHICAGO

The new instrument here described has been found useful in a large variety of operations on bones and joints. The mechanical principle on which the instrument is based was suggested to me about eight years ago by the late Dr. George

Marshall of Kokomo, Ind., who made, by hand, his original model for hammer toe operations.

I have found this rongeur valuable in the operations of laminectomy, cheilectomy, hallux valgus, hammer toes, spine fusion, shaping and cutting bone grafts, arthrodesis of the foot and biopsy.

The instrument is used more and more in situations in which I formerly used an osteotome, chisel, punch or rongeur. Some of the advantages of this instrument are that (1) it is almost universal in application, (2) the operator can cut bone to an accurately desired depth, (3) it will cut the hard dense cortex of the tibia or femur and the soft cancellous bone of a meta-



Universal bone rongeur

carpal or metatarsal, (4) it does not crush the bone but cuts it as a microtome cuts a section of tissue, (5) it has a box lock which prevents overriding of its jaws, (6) it does not produce shock as does mallet and chisel, (7) it is self-cleansing because the cut bone is forced through the open jaws.

The instrument is made in two sizes.

The manufacturer, V. Mueller & Co., Chicago, aided greatly in the development of this instrument.

104 South Michigan Avenue

NICKEL DERMATITIS FROM SPECTACLE FRAMES
AND WRIST WATCH

HOWARD FOX, M.D., NEW YORK

Two years ago, Lain reported¹ three cases of dermatitis due to spectacle frames made of white gold, an alloy containing nickel. Since then I have seen a patient who had not only a similar dermatitis from spectacle frames but also an eruption due to wearing a nickel-plated wrist watch.

E. G., a man aged 24, a clerk, consulted me March 10, 1932, for a vesicular and crusted eruption limited to areas where his spectacle frames were in contact with the skin. The affected areas included horizontal streaks along the temples and small patches on the ear lobules, the postauricular region and the left inner canthus. He also presented well-defined erythematous squamous patches on the front and back of the right wrist corresponding to the position where his wrist watch had been in contact with the skin.

The patient had worn spectacles since childhood for near-sightedness. He had always used spectacle frames made of tortoise shell until six months before when he changed to frames made of "white gold." About six weeks before I saw

¹ Lain, E. S. Nickel Dermatitis. *A New Source J. A. M. A.* 96:771 (March 7) 1931.

him he noticed that the rims of the spectacles were beginning to tarnish and a week later the eruption appeared on his face. This disappeared completely in three or four weeks after he discontinued the use of the white gold frames. When seen a year later, the eruption had not recurred.

The patient had also worn a nickel-plated wrist watch for the first time in his life during the past ten months. At the



Fig 1—Dermatitis due to spectacle frames of white gold

end of four or five months an eruption appeared on the back of the right wrist, and the patient noticed that a good deal of the nickel plate had become worn. He discontinued wearing the watch and the eruption promptly disappeared. One month later he again wore the watch on the back of the wrist and for the second time an eruption appeared in this locality. He



Fig 2—Dermatitis due to nickel plated wrist watch

changed the watch to the front of the wrist and this was also followed by an eruption confined to the area where the watch had been in contact with the skin. He stopped wearing the watch entirely but since that time (three months) the eruption had persisted on both the back and the front of the wrist. He was given three fractional doses of unfiltered x-rays at weekly intervals with moderate improvement. He then disappeared from observation but when seen a year later (April 12 1933) he stated that the eruption on the left wrist had disappeared

one week or so after the last x-ray treatment and had not recurred.

It is well known that certain individuals are sensitive to nickel and after sufficient contact with this metal develop a dermatitis. This case is plainly one of contact dermatitis in such a person, as the eruption appeared at points of contact disappeared on removal of the causative agent and reappeared on subsequent contact. The persistence of the patches on the wrist simply indicated the high degree of sensitivity which repeated contact had produced.

140 East Fifty-Fourth Street

RESORCIN ANAL DERMATITIS DUE TO RESORCIN IN ANUSOL SUPPOSITORIES

JAMES H MITCHELL M D CHICAGO

Resorcin sensitization is encountered from time to time in dermatologic practice. What the percentage of sensitized individuals may be is unknown at present. Urbach¹ says that only one person in several thousand will be found sensitized and Nathan and Stern² state that cases of resorcin sensitization are rare.

Resorcin (metadihydroxybenzene) is an ingredient of many hair lotions sold in the shops and used by hair dressers and barbers. Examination of the prescription files of a pharmacy doing a large prescription business discloses that many prescriptions for resorcin are filled daily and that resorcin is prescribed



Fig 1 (case 1)—Positive patch tests from left to right 1 Pyrocatechin (orthodihydroxybenzene) (twenty four hour patch test) 2 Anusol suppository—resorcin (metadihydroxybenzene) (two weeks after twenty four hour patch test) 3 Hexylresorcinol (alkyl resorcin)



Orthodihydroxybenzene



Metadihydroxybenzene

about four times more frequently than is monoresorcinol acetate (introduced as Euresol).

An informal inquiry of some of the druggists doing a large volume of business in the Chicago loop district indicates that the sale of Anusol suppositories is heavy. No one interviewed, however, had had any complaint of irritation set up by the use of these suppositories. A report of two cases of severe dermatitis occurring in resorcin sensitized individuals as the result of the use of these suppositories therefore may be of interest. One of these cases was demonstrated at the April meeting of the Chicago Dermatological Society and photographs of the patch tests in both cases were shown at this session of the society.

CASE 1—A physician developed a mild hemorrhoid in September, 1932. Never before having had occasion to use or prescribe anal suppositories he had an ample accumulation of Anusol samples in the office. Curiosity as to the possible effect of anal suppositories on hemorrhoids led him to test the efficacy of the generous supply of samples. The suppositories were

¹ Urbach E. Arch f Dermat u Syph 118 146 1924
² Nathan E. and Stern F. Dermat Wehnschr 61 1471 (Oct) 1930

used as directed for three days. At the end of that time the itching and burning had become almost intolerable, but the hemorrhoid remained unchanged. The suppositories were discontinued, petrolatum was applied freely and, in the course of two weeks, the discomfort gradually disappeared.

A twenty-four hour patch test of the suppository on the arm resulted in a severe reaction, which lasted for three weeks.

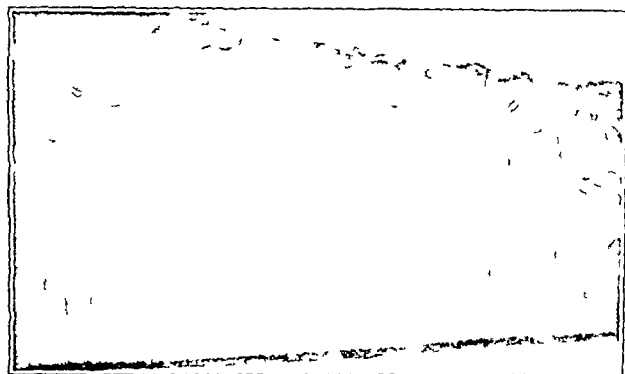


Fig. 2 (case 2)—Positive patch test with Anusol suppository after twenty four hours (metadihydroxybenzene)

When a medical student, the patient had discovered as a result of application of resorcin to the scalp that he was highly sensitized to this drug. A patch test with hydroquinone (paradihydroxybenzene) gave a slightly less sharp reaction. A patch test with pyrocatechin (orthodihydroxybenzene) gave a sharp reaction but was perhaps slightly less than that of hydroquinone. A test with monoresorcinol acetate was about equal to that of hydroquinone. A patch test with hexylresorcinol gave a very slight but definitely positive reaction. A patch test with plain cacao butter was completely negative.

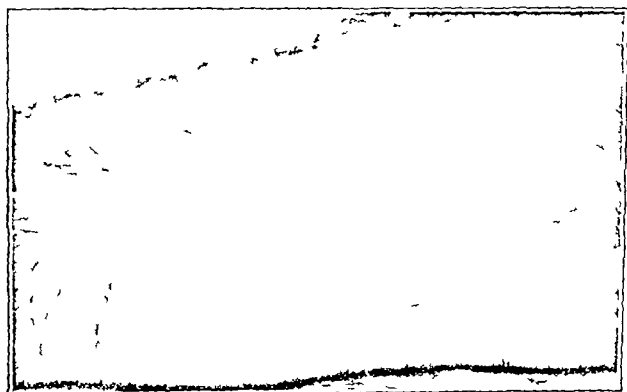


Fig. 3 (case 2)—Positive patch test with 0.4 per cent solution of resorcin after twenty four hours (metadihydroxybenzene)

CASE 2—A man a cosmetic manufacturer was first seen in January 1927, with a severe dermatitis about the anal region. He had consulted his family physician for a hemorrhoid. There had been no itching. He was referred to a dermatologist who instructed him to break an Anusol suppository into two parts, one of which was to be inserted and the other to be rubbed about the anal region. A severe pruritus developed. He deserted the dermatologist and consulted a proctologist, who discontinued the suppositories but added other irritants. At the height of the dermatitis the patient was seen by me. A treatment dermatitis was obvious but sensitization to the resorcin in Anusol suppositories was not suspected. The patient was given radiotherapy and soothing application, with complete recovery.

In April, 1927, the patient was again seen with a mild dermatitis as a result of the appearance of a hemorrhoid and the use of one Anusol suppository. The suppository was still not incriminated, but never having prescribed suppositories I dis-

continued them. The patient was not seen again until April 1, 1933, when he appeared with an area of dermatitis the size of his palm about the anal region. He stated that another hemorrhoid had developed and that he had applied and inserted the Anusol suppository as directed by the dermatologist in 1927. A patch test with an Anusol suppository gave a violent reaction. A patch test with resorcin gave a similar reaction. Patch tests with hydroquinone (paradihydroxybenzene) and with pyrocatechin (orthodihydroxybenzene) were exactly similar to those in case 1. The anal dermatitis subsided with soothing applications and discontinuance of the suppository.

Presence of resorcin in Anusol suppositories was readily determined by applying the United States Pharmacopeial tests as follows: Two suppositories were dropped in 10 cc of boiling distilled water. The fat was filtered out through paper, the resulting clear liquid was tested as follows: a few cubic centimeters were mixed in a test tube with 10 cc. of sodium

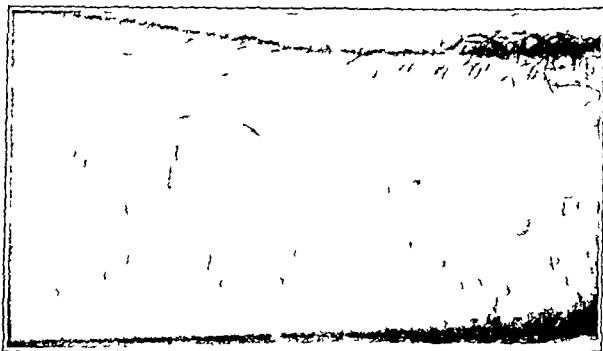


Fig. 4 (case 2)—Positive forty hour patch test with pyrocatechin (orthodihydroxybenzene)

hydroxide test solution and a drop of chloroform added. Heating the solution resulted in an intense crimson solution. The same test carried out with a 1 per cent solution of resorcin gave a similar result. Tests carried out with solution of hydroquinone and pyrocatechin were entirely dissimilar. A few cubic centimeters were mixed with ferric chloride test solution. A violet color resulted. Adding ammonia test solution resulted in a deep brownish yellow solution. These positive chemical tests, together with the sharply positive patch tests, occurring in a known resorcin sensitized individual and in another individual who also gave a positive resorcin test, would seem to

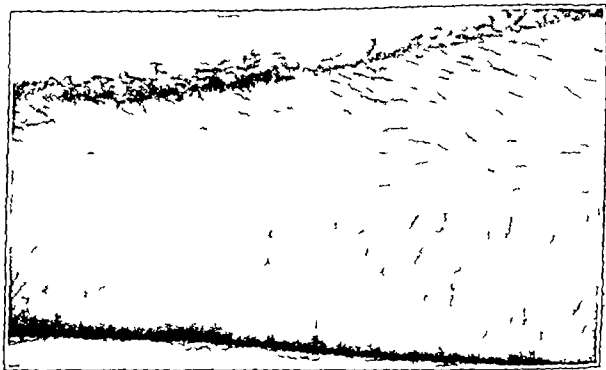


Fig. 5 (case 2)—Positive forty hour patch test with hydroquinone (paradihydroxybenzene). The relic of the resorcin patch test is seen higher up on the forearm.

leave little doubt as to the presence of resorcin in the suppositories.

These two cases are of interest because of the lack of agreement in the observations of Urbach and those of Nathan and Stern. Urbach found that his patient also reacted to hydroquinone and to pyrocatechin. In other words, there was a group reaction to the isomers of resorcin. Moreover, internal administration of the drug caused a violent generalized eruption.

tion Gradually increasing doses of the drug, however, resulted in desensitization Nathan and Stern on the contrary, state that their patient did not react to hydroquinone and to pyrocatechin Their patient, however did react to the monomethylether of resorcin but not to the dimethylether Their patient therefore did not react to the isomers but did react to some of the derivatives of resorcin

CONCLUSIONS

1 Two cases of severe resorcin anal dermatitis resulted from the use of Anusol suppositories

2 The rarity of such cases seems to be indicated by the few references in the literature to resorcin dermatitis and to the absence of reference to cases of dermatitis due to this drug when used in suppositories

3 My observations agree with those of Urbach and are contrary to those of Nathan and Stern as regards the reaction of resorcin sensitized individuals to the isomers of resorcin

25 East Washington Street

Special Article

**LYMPHOGRANULOMA INGUINALE, THE
FOURTH VENEREAL DISEASE**

ITS RELATION TO STRICTURE OF THE RECTUM

H N COLE MD

CLEVELAND

A disease known as climatic bubo has been, in part at least, recognized for the past seventy-five years It was supposedly tropical in character, running a very chronic course with more or less suppuration of the affected inguinal lymph nodes It was supposed to follow venereal exposure, especially to Negro women The lymph node symptoms did not show up, as a rule, until an entrance for the infective agent was no more to be found The cause was unknown As long ago as 1865, the French clinician Trousseau¹ gave a very good description of it

I must not forget to say a few words about a lymph node infection which I have often observed in the young Creoles, and more particularly in the Creoles of Reunion and Maurice

In adolescence and more in the boys, we see the superficial and deep nodes in the groin swell up on one or both sides Symptoms of the disease come on in cycles lasting one two or three months and separated by intervals, it may be, of several months Then comes a violent paroxysm and several of the nodes suppurate In certain of the cases the suppuration extends to several of the nodes or to the entire mass The patient is thus bedridden for a long time and the suppuration may last for a year In most of the cases the disease comes in the winter years

Scheube² in 1867 while independently writing of this trouble as seen in Japan, gave it the name "climatic bubo" Jouet³ in 1882 in Indo-China, described a suppurating bubo not accompanied by a portal of entry Particularly enough H G Klotz⁴ in 1890 reported that in a period of ten years' hospital practice in New York he had seen 120 cases of "strumous bubo," most of

them coming in the summertime He felt that they had no relation to syphilis, though he had often noted the concomitant appearance of an erosion of a small sore, or of herpetiform lesions of the genitalia He found that the lymph nodes in the groin were filled with milium pus foci, and he was astonished that so little was said about them in the literature

Subsequent reports have been made on this disease by various writers, including Muller and Justi⁵ who, in 1914, reviewed the entire condition In the United States various naval medical officers have, from time to time, written on the subject of tropical bubo Hansmann⁶ recently reported several cases, using the term "nontuberculous lymphadenitis" Later Barber and Coogler used the same term in reporting cases It remained, however, for Nicolas, Favre and Durand⁷ to describe fully and interpret correctly the clinical and histologic picture of this disease, which they termed "subacute inguinal lymphogranulomatosis" (lymphogranulomatosé inguinale subaigue) They considered the origin venereal They considered the small foci of suppuration disseminated throughout the parenchyma of the lymph node as very characteristic They also noted the occasional presence of an evanescent primary lesion These observations were amplified in 1922 by a pupil of theirs, Phylactos⁸ He pointed out that the disease was relatively common, was transferred by coitus, and had an incubation period of from ten to twenty-five days He felt that it was an independent disease that should be differentiated from Hodgkin's disease, tuberculosis, syphilis, soft chancre and bubonic plague

Pardo-Castello⁹ in Havana, Destefano and Vacca rezza¹⁰ in Argentina and de Bellard¹⁰ in Venezuela have observed cases of this syndrome In 1925, Frei¹¹ reported a skin test for the disease Since then, as the specificity of this test has been proved and as the scope of the disease has widened, interest in the whole problem has greatly increased The result is that there has been an enormous increase in the number of reports on the condition, almost entirely from Europe and South America The first complete report in the United States was made by DeWolf and Van Cleave¹² from our clinic in 1932 The reader is also referred to the complete monograph by Hellerstrom¹³ and to recent complete reviews of the entire subject by Hellerstrom¹³ by Koch¹⁴ and by Ravaut and Cachera¹⁵ A symposium on Nicolas, Durand and Favre's disease (lymphogranuloma inguinale) was held at the dermatologic clinic in Strasbourg in March, 1931, and reported in the bulletin of the French Dermatologic Society¹⁶

As reports on the disease have increased, new names for the condition have multiplied Nicolas, Durand and Favre suggested "subacute inguinal lymphogranulomatosis" Scheube named it "climatic bubo" It has also been given such names as "the fourth venereal disease,"

4 Muller O and Justi K Arch f Schiffs u Tropen Hyg 18 132 1914

5 DeWolf H F and Van Cleave J V Lymphogranuloma Inguinale (careful review) J A M A 99 1065 (Sept 24) 1932

6 Hansmann G H Surg Gynec & Obst 39 72 (July) 1924

7 Durand M Nicolas F and Favre M Bull et mem Soc med d hop de Paris 25 274 (Feb 6) 1913

8 Phylactos A The c de Lyon 1922 quoted by Hellerstrom¹³

9 Pardo-Castello V Lymphogranulomatosis Inguinalis Arch Dermat & Syph 11 35 (July) 1926

10 Cited by DeWolf and Van Cleave

11 Frei Wilhelm Klin Wchn chr 4 2148 (Nov 5) 1925 11 512 (March 19) 1932

12 Hellerstrom S Acta dermat venerol 1929 app 1 5224

13 Hellerstrom S Zentralbl f Haut u Geschlechtskr 10 703 (May 5) 1932

14 Koch F Zentralbl f Bakt 104 529 544 (Feb 11) 1932

15 Ravaut P and Cachera R Paris med 1 495 (June 7) 1932

16 Symposium Lymphogranuloma inguinale at the Strasbourg Clinic Bull Soc franç de dermat et syph 38 524 593 1931

From the Department of Dermatology and Syphilology Western Reserve Medical School and Cleveland City Hospital
Clinical lecture read before the Eighty-Fourth Annual Session of the American Medical Association Milwaukee June 13 1933

The writer is indebted to the head of his staff Dr H F DeWolf as well as to his residents Drs J V Van Cleave Harris Connors Bruce Palmer and Henry C Shaw for their enthusiastic help in the studying of these cases and in the preparation of this report

1 Trousseau Adenoc (Ann med cited by Chevallier P and Bernard J Rev de med Paris 47 856 (Dec) 1910

2 Cited by Hellerstrom¹³

3 Jouet cited by Chevallier P and Bernard J Rev de med Paris 47 883 (Dec) 1930

"tropical bubo," "maladie de Nicolas et Favre," "subacute inguinal paradenitis," "strumous bubo," "subacute inguinal lymphadenitis" and "nontuberculous granulomatous lymphadenitis." The term lymphogranuloma inguinale seems to be used most extensively in Europe, though it is an entirely separate condition from granuloma inguinale. Lymphogranuloma inguinale is a disease of the lymph channels and of the nodes, while granuloma inguinale involves the skin and subcutaneous tissue. Both diseases are, of course, generally spread by impure sexual contact. Nevertheless, current medical usage will probably continue the name lymphogranuloma inguinale.

CLINICAL SYMPTOMATOLOGY

After an incubation period varying from ten days to three weeks post coitus, the patient notes a swelling of the inguinal lymph nodes. This may be mild or quite severe. It may be unilateral or bilateral, and in probably 50 per cent of the cases it will be associated with generalized symptoms of chilliness, lassitude, pains in the joints and muscles, stiffness of the neck, and headaches. Occasionally, gastric symptoms are noted.



Fig. 1—Bilateral lymphogranuloma inguinale, showing a multiple fistulous opening.

Observation of the temperature may show it to be remittent, intermittent or even of the typhoid type, and it is not rare for a patient to enter the hospital with a temperature around 39 or 40 C (102.2-104 F). Occasionally the fever will persist for several weeks—probably as new nodes continue to be involved.

Local examination of the genitalia generally yields nothing, but in scattered instances either one will get a history of an evanescent lesion or actual objective symptoms will still be present. They seem to be of four types: (a) a fleeting herpetic lesion resembling a herpes praeputialis, (b) an ulcerative lesion, (c) a nodular lesion resembling somewhat a primary lesion, and (d) a specific urethritic type. These last cases, though presenting a discharge, show no gonococci. In women, it may be most difficult to find the primary port of entrance for the virus.

The time of the appearance of the genital lesion after exposure is difficult to determine definitely, as the primary lesion is often fleeting in type or never even noted. Probably a few days to a week or more would adequately cover this period. Generally, within from ten days to two or three weeks post coitus, the draining

lymph nodes will begin to enlarge. With a lesion of the male genitalia, this means the superficial inguinal nodes. At first the swelling will be more or less uniform, rather hard and tender. As time goes on, the nodes fuse to the skin, which takes on a reddish violet tint—the "adente violette" of Phylactos.⁶ The affected skin, being put on a stretch from the local enlargement, becomes quite shiny. Later, multiple areas of softening will appear and eventually the process breaks down with characteristic multiple fistulous openings as compared to the broken down chancroidal bubo in which is found a large single opening. As new nodes are involved, these also may go through the same cycle. The deep iliac lymph nodes in the pelvic fossa may secondarily become involved—a significant, almost pathognomonic sign—but they do not break down. As will be shown later, the inguinal localization of the disease in females is rare and the inguinal nodes are not so greatly affected. Owing to the lymph supply of the female genitalia, the process is more prone to spread to the deeper pelvic nodes and to the lymph nodes of Gerota around the lower part of the rectum.

Along with the local lymph node reaction, one occasionally finds a generalized lymph node enlargement, the spleen may be enlarged, the joints may be swollen, and even a general polyarthritides may be present. General skin manifestations, such as erythema nodosum and erythema multiforme-like eruptions, urticaria and scarlatiniform eruptions, have been noted by Hellerstrom,¹² Frei,¹¹ Klaue,¹⁷ Lohe and Blummers¹⁸ and others. Episcleritis has been seen by Guttentag,¹⁹ and three such cases have been observed in our own clinic. Pustular elements on the skin in connection with the disease have been seen by Chevallier and Bernard²⁰ accompanying an erythema nodosum and arthralgia of the knees.

The disease as seen in the female may take on quite a different aspect. In fact, it is suspected by more than one investigator that the female may sometimes harbor the infection as a saprophyte. Thus, Schulmann²¹ reports a case of lymphogranuloma inguinale in a young student. Examination of the student's paramour revealed a banal metritis and some painless, movable inguinal lymph nodes. Sezary, in discussing the case, said that he had seen a woman with a positive Frei reaction and no symptoms, while her husband had a typical lymphogranuloma inguinale.

This is not the case in all females, however. In some of them one may even find a fleeting primary lesion of one of the four types described. Moreover, rarely the inguinal nodes may go through the same gamut of reactions as in the male. A careful review of studies on the lymph supply of the male and female genitalia has been made by Barthels and Biberstein²² and by Jersild.²³ These writers show that the lymph nodal reactions of the disease are dependent on the draining lymph supply to the parts. In the male, most of the lymph channels of the genitalia drain into the inguinal and secondarily into the deeper iliac nodes. Therefore, these nodes are the ones most often affected. In the female, on the

- 17 Klaue Ztschr f Geburtsh u Gynäk 102 405 1932
18 Lohe H and Blummers K Med Klin 27 614 (April 24) 1931
19 Guttentag O E Zentralbl f inn Med 53 602 (No 18a) 1932
20 Chevallier P and Bernard J Bull Soc franç de dermat et syph 39 760 (June) 1932
21 Schulmann M E Bull Soc franç de dermat et syph 40 78 (Jan) 1933
22 Barthels C, and Biberstein H Beitr z klin Chr 152 161 325 464 1931
23 Jersild M O Bull Soc franç de dermat et syph 38 557 (March) 1931 39 1303 (Nov.) 1932

contrary, only the lymph from the clitoris and external vulva drains into the inguinal nodes, while the supply from the vaginal mucosa, and especially from the posterior vaginal wall, drains into the lymph nodes around the rectum, where there are three lymph plexuses extending together up in the rectum to a height of from 4 to 6 cm. Consequently, if this is true, one would



Fig 2—Extensive fistulous esthiomene of years' duration showing perianal fistulous opening. The Frei reaction was positive.

rather look for symptoms in the female to be located more in the nodes of the lower part of the rectum and of the floor of the pelvis. Is this true in actual practice?

"ANORECTAL SYNDROME"

As long ago as 1848, Huguier²⁴ described a condition of the vulva in which there was an elephantiasis of the tissues and an accompanying chronic, progressive ulceration, involving the labia, the perineal body, the anal orifice and often the lower part of the rectum. The author described a superficial, a perforating, a hypertrophic and a mixed type. Lesions were most often situated over the posterior commissure and over the perineal body. Very often there was an accompanying stricture of the rectum—Bandelier says it always accompanies the trouble. Huguier felt that it was due to tuberculosis, and Larsen²⁵ of Copenhagen, in 1849, thought it was due to syphilis.

In 1875 the French syphilologist Alfred Fournier described a syndrome he had observed consisting of perineal and rectal multiple fistulas. He also noted the fact that the rectal wall was infiltrated and narrowed. Fournier thought the trouble was due to syphilis and it has been known in medical literature as the "anorectal syphiloma of Fournier." Audry and Puechar²⁶ gave the first description of elephantiasis of the vulva accompanying the "syphiloma"; they thought it was due to lymph stasis. Fournier later confirmed the coexistence

of the "anorectal syphiloma" and of chronic vulvar lesions. The rectal condition was most often seen in the female, and he spoke of its being rebellious to treatment. A like chronic elephantiasis of the male genitalia has been described by Barthels and Biberstein²² in which a study of the tissue showed it to be the histologic picture of lymphogranuloma inguinale. There was obstruction of the lymph channels with the specific growth.

Various explanations have been offered for esthiomene, including lack of cleanliness, banal ulceration and gradual spread because of its location and chances of reinfection, prostitution, chronic chancroidal infection, gonorrhea, and chronic lymphangitis following a local infection.

For years, Jersild²³ of Copenhagen has been interested in this problem. As far back as 1920 he was convinced that the "anorectal syphiloma" of Fournier was not syphilitic but an elephantiasis of the tissues due to lymph stasis—through obliteration of the inguinal and rectal lymph nodes. He thought that a chronic chancroidal infection was the cause of the trouble and that the "anorectal syphiloma" of Fournier was identical with the esthiomene of Huguier or with the condition described by Jadassohn as "ulcus vulvae chronicum elephantasticum." Darier had already termed this elephantiasis as the "pendant" to the syphiloma of Fournier. The fact that made Jersild suspicious of the syphilitic cause of the trouble was that in several of

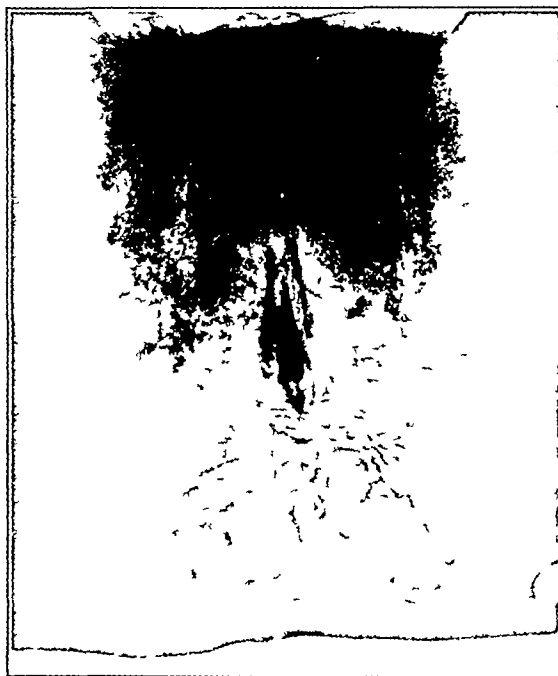


Fig 3—Chronic perianal nodules and scar formation accompanying a high grade stricture of the rectum. The Frei reaction was positive; the Wassermann reaction negative.

the so-called anorectal syphilomas the patient later developed an early syphilis which could not be attributed to reinfection. Moreover, about this time, 1925 the specific skin reaction for lymphogranuloma inguinale, as worked out by Frei and the specific skin reaction for chancroids, as worked out by Ito-Reenstierna were reported. Jersild reported that the Frei reaction was positive and the Ito-Reenstierna and Wassermann reac-

²⁴ Dubreuilh, W. A. La dermatologie dermatologique Paris, Masson & Co. 2, 609, 1907.

²⁵ Larsen, S. I. cited by Feilchenfeld, H. Med. Klin. 25, 965 (July 27, 1903).

²⁶ Audry and Puechar, cited by Jersild²³.

tions were negative in certain of his earlier studied cases. He also reported a woman with a typical esthiomene of fourteen years' duration in which the Frei reaction was positive and the chancroid and Wassermann reactions were negative. He now is convinced that the rectal lesions in the so-called anorectal syphiloma of Fournier are secondary to an adenopathy of the ganglion of Gerota, surrounding the lower part of the rectum, and that they are not chancroidal but rather lymphogranuloma inguinale.

Barthels and Biberstein, following the report of Frei and Koppel,²⁷ have made a very careful study of the inflammatory rectal strictures. Most of these strictures appear in females. They involve the lower 9 to 10 cm of the rectum and, in fact, most of them do not extend higher than 6 cm. The tendency of the infection of the rectal and pelvic lymph nodes in the female is to an inflammation which spreads to the rectal walls through the lymph channels. Later lymph thromboses take place. The end-result is inflammation and scar formation with narrowing of the rectal lumen. The stricture may be bandlike or, if all the lymph plexuses are involved, tubular in character. The authors reported five cases, all with a positive Frei and a negative Wassermann reaction. One of their patients had an elephantiasis of the vulva and ulceration of the posterior commissure. In four cases, the rectal mucosa was cornified and in three there were extensive ulcers above the anus. In cases 2, 4 and 5 the rectum and vagina were closely bound together by scars, and in case 4 amputation of the lower rectum was impossible.

Bensaude and Lambling²⁸ have reported an extensive study of forty-eight cases and confirm the observations of Barthels and Biberstein.

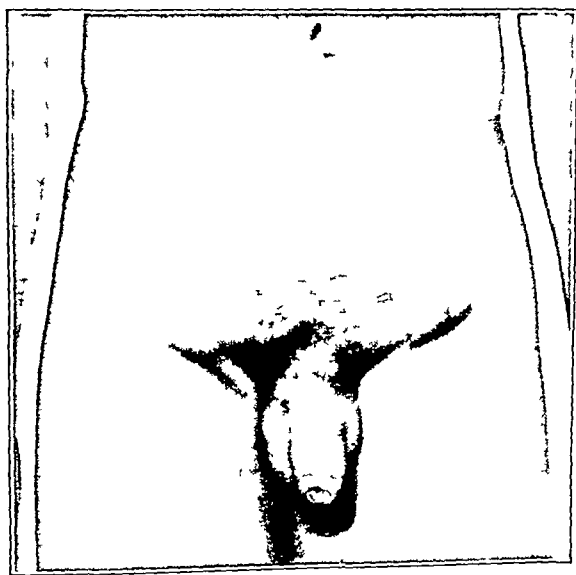


Fig. 4—Characteristic bilateral lymphogranuloma inguinale. Three Frei reactions on the right forearm still positive after ten days.

As already mentioned, the male ordinarily does not get this grave complication because of the lymph supply to the genitalia draining first into the inguinal and iliac nodes. Occasionally this does take place however. In a homosexual person one would expect the local

process in the rectum, as in the case reported by Ravaut and Levaditi.²⁹

To sum up the present feeling in regard to the cause of the inflammatory stricture of the rectum and its relation to lymphogranuloma inguinale, Seneque³⁰ says there are four forms: (a) a pure stricture limited to the rectum, (b) a rectal stricture with elephantiasis of



Fig. 5—Anorectal syndrome with rectal stricture and cauliflower-like perianal lesions in a male. The Frei reaction was positive.

the external parts, (c) rectal stricture complicated with fistulas and in the past classified as tuberculosis because it is granulomatous in character, even though Koch's bacillus is not found, and (d) rectal stricture with pelvic cellulitis.

ETIOLOGY

It was suspected for some years that lymphogranuloma inguinale was due to an organism as most of the cases followed venereal exposure. Moreover, so-called conjugal cases had been reported by Mamou,³¹ Chevallier and Bernard,³² Gate, Michel and Morel,³³ and Lepinay and Grevin.³⁴ Nicholas³⁵ reported the cases of three soldiers exposed to the same female, all of whom contracted lymphogranuloma inguinale, moreover, one of the soldiers was married and his wife likewise later came down with this disease. Several cases of the disease have been observed in physicians from extragenital infection, the most celebrated being that reported by Hellerstrom. The physician was infected on the finger in the autumn of 1904 while operating on a patient with inguinal adenitis of unknown origin. His axillary nodes later went through the typical course of lymphogranuloma inguinale and required extirpation, eventually healing. Years later,

²⁹ Ravaut P, Levaditi C, Lambling A and Cachera R. Bull Acad de med Paris 107: 98 (Jan 19) 1932.

³⁰ Seneque J. Presse med 40: 22 (Jan 6) 1932.

³¹ Mamou M H. Bull Soc franç de dermat et syph 39: 708 (June) 1932.

³² Chevallier P and Bernard I. Sang 6: 572-573 1932.

³³ Gate M, Michel P J and Morel H. Bull Soc franç de dermat et syph 39: 555 (March) 1932.

³⁴ Lepinay and Grevin. Bull Soc franç de dermat et syph 39: 823 (June) 1932.

³⁵ Nicholas M. Bull Soc franç de dermat et syph 38: 529 (March) 1931.

²⁷ Frei Wilhelm and Koppel A. Klin Wehnschr 7: 2331 (Dec 2) 1928.

²⁸ Bensaude R and Lambling A. Paris med 1: 361 (April 30) 1932.

Compt rend Soc de biol 108: 1050 (Dec. 18) 1931.

in 1927, Hellerstrom did a Frei reaction on the patient and found it to be positive. Buschke³⁷ has also reported an involvement of the submaxillary nodes from a lesion of the tongue following unusual sexual relations.

Naturally, numerous attempts have been made to find the cause of the disease and a variety of organisms have been reported but not confirmed by later studies. Hellerstrom and Wassen³⁸ were finally able to report at the eighth International Dermatologic Congress in Copenhagen in 1930 the successful subdural transmission to apes. This work has since been confirmed by Levaditi and Ravaut and then associates³⁹. Moreover, Levaditi, Marie and Lepine⁴⁰ have, after several passages through apes, again successfully transmitted the disease to human paralytic patients through preputial inoculations. The lymph nodal changes produced in these cases corresponded with the typical disease as seen in man. The disease as seen in the apes has the characteristics of an encephalitis which becomes more fatal⁴¹ and has a shorter incubation period as it adapts itself to the host. It is a filtrable virus⁴². The virus loses its virulence very rapidly in glycerin but holds its virulence in the frozen state at least twenty-two days⁴³. Apes inoculated subdurally also have the virus in the liver, spleen, kidneys, cord and lymphatics. The virus does not penetrate a collodion sac⁴² but is transmissible to white mice⁴³. Working with human beings (patients with dementia paralytica), Chevalier and Bernard⁴⁴ have found that inoculations depend on the virulence of the virus and also on the host. Certain strains are quite virulent, and in others symptoms are hardly apparent. Successful transference to guinea-pigs⁴⁵ and rabbits has been reported. The latter resulted in a histologic and biologic meningo-encephalitis for it could be further transmitted to lymph nodes of rabbits and guinea-pigs. Meyer and Anders⁴⁶ also claim to have successfully grown material which they could transfer to guinea-pigs.

PATHOLOGY

If one removes surgically a mass of lymphogranuloma inguinale lymph nodes grossly there is a dense perinodal exudation binding the nodes together. These nodes on section, show multiple whitish areas of softening abscesses. If the nodes are in an early stage, they may simply show reddening. The histologic picture has been carefully described by Nicols and Favre, Hellerstrom, DeWolf and Van Cleve and others. It resembles somewhat the appearance of tuberculosis—certainly of a granuloma. One finds specific granulation tissue with areas of necrosis walled off by palisades of epithelioid cells. These areas of necrosis often assume a starlike shape, often there is an extensive impouring of leuko-

cites. It probably is not always possible to differentiate the picture from a tuberculosis,⁴⁷ or from a syphilitic or other infectious lymph node state⁴⁷. The abscesses in the glands nearly always show much broken down material, and giant cells may be found in different portions of the nodes.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

Given a patient who has an inguinal adenitis following a transitory genital lesion the possibility of lymphogranuloma inguinale must always be kept in mind. The large mass of prominent nodes sooner or later fixing themselves to the skin, which takes on a violaceous tint, is very characteristic of this disease. Miskjian⁴⁸ suggested the descriptive term "hypertrophic bubo". The diseases to be most frequently differentiated from lymphogranuloma inguinale are lymph nodal reactions in connection with chancroids and with syphilis. Granuloma inguinale is a disease of the skin and not of the lymphatic system so it will not have to be seriously considered. The lymph nodal reaction in chancroids is more that of an acute painful adenitis which softens and breaks down with one central area of necrosis. The typical picture in lymphogranuloma inguinale on the other hand, is that of multiple areas of suppuration, corresponding to the multiple abscesses in the nodes. In a case of chancroids, the bacillus of Ducrey will be found in smears made from local lesions on the genitalia. Finally, in a case of chancroids gone on to the stage of adenitis, the patient will have a positive Ito-Reenstierna⁴⁹ reaction. This is a specific intradermal test corresponding to the tuberculin test, carried out by the injection of killed bacillus of Ducrey organisms.

In syphilis, the lymph nodal reaction is that of a sharply defined hard, painless set of nodes which do not break down unless complicated with some other disease. Moreover, there would ordinarily be evidence of a primary lesion, and the dark field illuminator and the Wassermann test would go far to settle the diagnosis.

Other conditions that at times may enter into the picture are Hodgkin's disease, tuberculosis, the bubonic plague, tularemia malignant growth and possibly a pyogenic infection.

The diagnosis of lymphogranuloma inguinale has been greatly aided by the report of Frei,⁵¹ in 1925, of a specific intradermal test. A suppurating lymph node not yet opened in a person having lymphogranuloma inguinale but who has never had a chancroidal infection or syphilis, furnishes the material for the test. Pus from this node is removed aseptically through a small incision, either by using a large bore needle or through introducing the tip of a record syringe and aspirating it. The material is diluted 1:4 or 5:10 depending on its thickness with sterile salt solution. It is sterilized at 60 C for two hours one day and 60 C one hour the succeeding day. Afterward it is tested for sterility and put up in ampules. The antigen is then tested on known cases of lymphogranuloma inguinale, of course the antigen from the source patient must not be tested on the same patient. In known cases of this disease it should give a positive reaction, and in normal persons and in cases of chancroid a negative reaction. For the test which corresponds to the tuberculin test an intradermal (not subcutaneous) injection of 0.1 cc is

36 Buschke A and Curth W. *Klin Wchnsch* 10 1:09 (Sept 12) 1931.

37 Hellerstrom S and Wassen E. *Tr 8th Int nat Cong Dermat & Syph* Copenhagen Aug 5 1930 Copenhagen Engelsen and Schroeder 1931 p 114.

38 Levaditi C, Ravaut P, Lepine P and Schoen R. *Ann Inst Pasteur* 48 27 (Jan) 1932 *Compt rend Soc de biol* 107 1:2 (Sept 18) 1931.

39 Levaditi C, Marie A and Lepine P. *Compt rend Soc de biol* 107 1496 (Sept 18) 1931.

40 Levaditi C, Ravaut P, Lepine P and Schoen R. *Ann Inst Pasteur* 48 27 (Jan) 1932.

41 Hellerstrom S and Wassen E. *Compt rend Soc de biol* 106 592 (March 20) 1931 *Ztschr f Immunitätsforsch u exper Therap* 73 114 1931.

42 Levaditi C, Ravaut P and Schoen R. *Compt rend Soc de biol* 109 1267 (April 29) 1932.

43 Levaditi C, Ravaut P and Schoen R. *Compt rend Soc de biol* 109 1176 (April 22) 1932.

44 Chevalier P and Bernard I. *Bull Soc franç de dermat et syph* 29 213 (June) 1931.

45 Meyer Kurt I, Entled H and Anders H E. *Klin Wchnsch* 10 1653 (Sept) 1931.

46 Meyer Kurt and Anders H E. *Klin Wchnsch* 11 15 (Feb 10) 1932.

47 Hellerstrom S. *Acta dermat venereol* 12 234 (Aug) 1931.

48 Miskjian H G. *Chancroidal Bubo* *J A M A* 87 143 (Oct 30) 1926.

49 Ierestierna J. *Arch f Dermat u Syph* 11 37 1924.

made and the reaction is read in forty-eight hours. If the test is positive, it will show a red papule at least 0.5 cm. in diameter. It may show a large erythematous halo around it, or it may even be so positive as to go on to necrosis. One negative test is not sufficient to rule out a lymphogranuloma inguinale. Some investigators claim that the test will not become positive until the lymph node has fused with the skin. Generally it will be positive within from ten days to two or three weeks after the adenitis is evident, and, as a rule, the positive state persists, probably throughout life. In other words, the patient develops an allergic state and probably such an individual cannot again acquire the disease, though this is not as yet entirely confirmed. In Hellerstrom's case, a positive reaction still showed after twenty-three years, and recently in our clinic there was observed a patient with a positive reaction after thirty years.²⁰ The reaction is specific for this disease only. The antigen used will ordinarily keep its potency for six months or even up to one year. One must be careful not to work with an antigen secondarily infected, for a false positive will result. In using an antigen, it is well to employ at least two others with it as controls. If the patient with the lymphogranuloma inguinale has a concomitant fresh syphilis, the Frei reaction may be masked (anergy) for the time being until the syphilis is under partial control. Any disease causing a breaking down of the patient's allergic powers may cause a temporary negative Frei reaction in an otherwise positive case. The Frei reaction has been of particular value in the diagnosis of the so-called anorectal syphiloma of Fournier and the anorectal syndrome of Iersild with elephantiasis of the vulva. In cases of chronic ulcerative elephantiasis of the vulva going under the term esthiomene, a Frei reaction is most valuable, though certain of these cases with prolonged illness and lessened general resistance may show an anergy and should not, on the strength of a single negative reaction, be considered as not due to lymphogranuloma inguinale.

Much interest has arisen from the fact that antigens prepared from the brains of infected monkeys²¹ give the same specific Frei reaction as with human materials when used on human beings. It has been suggested that, in a suspicious case under study, if the diagnosis cannot be made otherwise, some lymph node material be taken from the patient, an antigen prepared, and this antigen tried out in known cases of lymphogranuloma inguinale.

It probably should be mentioned that fresh cases of lymphogranuloma inguinale for a period of time during the acute stage of the disease occasionally will give false positive Wassermann reactions.²² This is a very important finding, as a 3 plus Wassermann reaction in a patient with inguinal adenopathy might easily be mistaken for syphilis and treatment instituted. Given such an exceptional case in which no other evidence of syphilis can be found, further Wassermann reactions and Frei reactions should be tried before the case is finally diagnosed as syphilis. We are convinced that, in the past, quite a few such cases have, on the strength of a glandular reaction following sexual exposure, been diagnosed as syphilitic because of a fleeting false positive reaction and treatment for syphilis has been instituted.

REPORT FROM THE CLEVELAND CITY HOSPITAL AND WESTERN RESERVE CLINIC

Since the report of DeWolf and Van Cleave was made from our clinic, March 15, 1932, fifty-two additional cases have been observed up to April 26, 1933. It well illustrates the fact that this disease is not an uncommon one in general city hospitals in the United States. In fact, with sufficient care in differential diagnosis, probably as high a proportion of these patients will be found in other clinics in this country.

POSITIVE FREI REACTIONS SYMPTOMS OF THE DISEASE ABSENT

Naturally, the Frei test has been used quite widely in our hospital, especially on patients with rather suspicious histories or symptoms. Twenty-two positive reactions have been picked up, all but one in male patients having histories of buboes running back from six months to between thirty and forty years. In five of these cases there was no definite time history as to the bubo. There was a history with one patient of a bubo two years before, with two, three years before, with two, five years before, with three, from ten to fifteen years before, with three, from fifteen to twenty years before, with two, from twenty to twenty-five years before, with two, thirty years before, and with one, between thirty and forty years before. Of the two patients with histories of buboes thirty years before, one had been treated at the Lakeside Hospital for what was then called a gonorrheal adenitis. The glands had been removed surgically. Pathologic diagnosis on the glands was that of an acute purulent inguinal adenitis. No gonorrheal organisms were found. In one additional case there was a fluctuating Frei reaction with no history of a bubo, but there had been a urethral discharge nine months previously. Otherwise, no positive Frei reactions were found except either in patients giving histories of buboes or in patients showing scars in their groins.

ACUTE LYMPHOGRANULOMA INGUINALE

We have encountered thirty-six male cases and one female case of early bubo forming lymphogranuloma inguinale in the same period of time. There were twenty-two Negro and fifteen white patients. The incubation period varied from two or three days up to several weeks before symptoms appeared. Sixteen of the patients had primary lesions, three of them being on the order of the urethritis type, which might be easily confused with a gonorrhea. Five of them showed small ulcers, two of them being just inside the urethral orifice. Seven had a small papular primary lesion. Gonorrhea was not found in connection with patients with a urethral discharge. In almost one half of the patients there was fever, either remittent or intermittent in type, occasionally quite severe—even up to 40 C (104 F) and accompanied with chills and night sweats.

Conjunctivitis was noted in three cases, arthritis was a severe symptom three times, and an erythema nodosum-like eruption of the body was seen once and an erythema multiforme-like eruption also once. The bubo was unilateral in twenty-one cases, bilateral in thirteen, and not noted in five cases. Needless to say, the Frei reaction was positive in every case, and the earliest reaction was eighteen days following the intercourse and four days after the appearance of symptoms of the bubo.

²⁰ DeWolf, H. F. to be published.
²¹ Hellerstrom, J. Freudenthal, W. Deutsche med. Wchnschr. 58: 2216 (Dec. 26) 1930. Reis, F. ibid. 57: 1577 (Sept. 11) 1931.

ESTHIOMENE AND THE ANORECTAL SYNDROME

Material showing symptoms of anorectal involvement and of ulcerative elephantiasis of the vulva, esthiomene, seen in the last year, comprised fifteen cases—thirteen females and two males. There were one white and one Negro male and eleven Negro and two white females. All the patients showed positive Frei reactions and seven of them had negative Wassermann reactions, though in the latter patients there was one with an old syphilis.

There were two examples of esthiomene, both in Negro patients, one patient had numerous deep dissecting fistulas through which probes could be passed for a long distance and which even connected up with the rectum. This patient was syphilitic but did not respond to antisyphilitic therapy. The other patient had a concomitant annular stricture 3 cm above the rectum. She showed moist fungoid masses in the lower margins of the vulva. Microscopic examination of the tissue showed fibrous tissue formation with lymphocytic infiltration. Foci of plasma cells and eosinophils were noted, also several areas of necrosis surrounded by large endothelial cells and some granuloma-like giant cells. There was a moderate vascularity.

One of the male patients had numerous anal excrescences, some elephantiasis of the scrotum and concomitant annular stricture of the rectum. The other male patient complained of obstinate constipation of seven years' duration. He had been treated at the Cleveland City Hospital for a bubo fifteen years previously. He had an annular stricture about 6 cm up the rectum and proctoscopic examination showed white fibrous scar tissue extending down from the ring stricture to the anal orifice.

Several of the female patients showed an anorectal syndrome with cauliflower-like indurated lesions around the anal orifice and attendant stricture of the rectal wall.

Most of the strictures were annular in type, though five of them were more diffuse and were tubular in character, in one instance extending 10 cm up from the anal orifice. Biopsy made from one of the strictures was reported to show simply chronic inflammation. Proctoscopic examination in one case showed "an acute and chronic ulcerative process with small elevated red islands, there was fibrosis of the posterior rectal wall."

In two instances there was an induration of the entire pelvic floor, and in neither case was the Wassermann reaction positive. In still another case there was reported to be a mass in the posterior vaginal wall. In one woman colostomy and repeated transfusions were found necessary to save her life, and in another patient with a stricture too small to allow passage of a pencil, operation was refused and the patient went home to die.

TREATMENT

The results of therapy in lymphogranuloma inguinale vary. Klotz² as far back as 1890 stated that he had had good results from total extirpation of the lymph nodes. This view has been shared in part by others. The case in our clinic, in which such an operation was performed thirty years ago by Dr. Henry L. Sanford, resulted in cure of the disease; it is true but the patient has had a brawny elephantiasis extending down to the shoe top ever since. Willoughby⁵² deplores even opening the nodes as they then suppurate for a long time.

On the other hand, Danel⁵³ simply removed a small node for biopsy in a case of lymphogranuloma inguinale, the patient returned two and one-half months later improved and in another month was well. Nicolau⁵⁴ and Barthels and Biberstein agree with Frei that partial removal of the suppurating nodes gives good results. Total extirpation, on the other hand, leads to a troublesome elephantiasis. Even if the nodes show evidence of receding without therapy, they think it well to open at least one area and allow drainage. Otherwise, in their opinion, there is possible danger of further spread to other nodes and perhaps more serious consequences, for example, anal stricture. The multiplicity of remedies suggested is probably good evidence of the inconclusive effect of various therapeutic agents thus far tried. Potassium iodide internally has been suggested; the intraglandular injection of 2 cc of glycerin into the open bubo once a week has been recommended by Pinard and Andre⁵⁵ and others. Foreign protein therapy of various types has been tried. In some instances it seems to be helpful. In our clinic some years ago Miskimin tried out the old fashioned seton, employing a strand of catgut through the node and tying the two ends on the outside. It promoted free suppuration and discharge and gave good results. This, in a way, would correspond to the suggestion of Barthels and Biberstein. Destefano and Vaccarezza are great believers in the use of intravenous injections of solution of antimony and potassium tartrate, and in our hands this therapy really has given benefit. Nicolau⁵⁴ has suggested 10 cc of compound solution of iodine intravenously every second day. Emetine has also been tried, as well as salts of iron, of copper, of arsenic and of mercury. High voltage roentgen therapy⁵⁶ has been tried in several clinics. Our own results have not been so happy, and Nicolas and Favre have noted that fistulas heal badly with this therapy. Gay-Prieto,⁵⁷ Levaditi and Ravaut, and Hellerstrom have had some beneficial action from the intravenous use of the Frei antigen strained through gauze, employing increasing doses of from 0.2 to 2 cc. In my estimation, rest in bed, promotion of free drainage, perhaps along with partial extirpation of the nodes involved, and the use of solution of antimony and potassium tartrate intravenously gives the best results. Naturally, the results in none of the cases of esthiomene and of anal stricture are particularly good.

SUMMARY

1 Lymphogranuloma inguinale is a distinct granulomatous entity involving the lymph nodes and is generally venereal in origin. After an incubation period of from one to several weeks, and not necessarily accompanied by a primary sore, there results a chronic bubo formation which eventually goes on to suppuration.

2 In the female and rarely in the male, the lymph nodes around the lower portion of the rectum may be involved, the inflammatory reaction often resulting in strictures of the rectum. Occasionally, in the female there may be involvement of the lower vaginal wall and labia in the form of a chronic ulcerative elephantiasis—esthiomene.

3 The cause of lymphogranuloma inguinale is a filterable virus which can be transferred to several of the

53 Danel L. *Ann d mal ven* 27 456 (June) 1932
54 Nicolau C T. *Ann Wehnschr* 11 991 (June 4) 1932
55 Pinard M and Andre R. *Bull Soc franç de dermat et syph* 39 707 (June) 1932
56 Fernet M P. *Bull Soc franç de dermat et syph* 39 585 1931
57 Gay Prieto J. *Dermat Wehr chr* 95 106 (July 16) 1932

lower animals (monkeys, rabbits, white mice, guinea-pigs)

4 A specific diagnostic cutaneous reaction (Frei reaction) has been evolved, the emulsion material from unbroken involved nodes being used as the antigen

5 A series of positive Frei reactions were made in patients suspected of having had the disease in the past. Among them were two with histories of buboes thirty years before, and one with a history of bubo between thirty and forty years before. This allergy of the skin apparently persists through life. Thirty-seven cases of lymphogranuloma inguinale with bubo formation, as well as two cases of esthiomene and thirteen of anorectal symptoms with stricture of the rectal wall gave positive Frei reactions and many showed no history or signs of syphilis or tuberculosis

6 Patients with bubo formation seen early responded comparatively well to surgical excision of the involved nodes or to the use of intravenous injections of solution of antimony and potassium tartarate

7 This study leads me to believe that this disease is by no means a rare disease in America as this material was noted in one clinic in the course of a year's study

1352 Hanna Building

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

AUTOLYZED LIVER CONCENTRATE-SQUIBB

—A mixture containing autolyzed liver concentrate 88 per cent and cocoa 12 per cent. Each gram is derived from approximately 7 Gm of fresh liver and represents the antianemic potency of from 20 to 30 Gm of fresh mammalian liver.

Actions and Uses.—Autolyzed liver concentrate Squibb supplies the antianemic potency of liver in a form that is palatable and convenient. The product is also rich in vitamin B₁ and G.

Dosage.—Four to six or more teaspoonfuls in divided doses daily for a period of ten days; thereafter a maintenance dose of one to two teaspoonfuls daily is usually sufficient.

Manufactured by E. R. Squibb & Sons, New York, by license of the University of Pittsburgh Medical School. U. S. patent applied for. No U. S. trademark.

Fresh edible livers which have been chilled immediately on removal from the body are ground and mixed with fiftieth normal hydrochloric acid. Sufficient chloroform is added to act as a preservative and prevent bacterial growth. The mixture is incubated at 37° C. and autolysis allowed to proceed from five to ten days. The solution is then filtered to remove any undigested material; the filtrate which contains the active material is desiccated at a lower temperature in vacuo and the resulting mass ground to a fine powder. Twelve per cent cocoa is added as flavoring. Each gram of the finished product represents the antianemic potency of from 20 to 30 Gm of fresh mammalian liver.

POLLEN ALLERGEN SOLUTIONS-SQUIBB (See New and Nonofficial Remedies, 1933 p. 30)

The following additional products marketed in 5 cc vials containing 10,000 protein nitrogen units per cubic centimeter have been accepted:

False Ragweed Combined Pollen Allergen Solution Squibb (False Ragweed and Slender Ragweed in equal parts) *Orachis (Shadscale) Pollen Allergen Solution Squibb (Shadscale, Redscale and Hinescale in equal parts)* *Oregon Ash Pollen Allergen Solution Squibb (Ragweed Combined Pollen Allergen Solution Squibb (Giant Ragweed and Dwarf Ragweed in equal parts)* *Rye Grasses Combined Pollen Allergen Solution Squibb (Perennial Rye Grass and Italian Rye Grass in equal parts)* *Sagebrush Combined Pollen Allergen Solution Squibb (Sagebrush and Pasture Sage in equal parts)* *Wormwoods Combined Pollen Allergen Solution Squibb (Biennial Wormwood, Dragon Sage-wort, Dark leaved Mugwort and Mugwort in equal parts)*

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL INFORMATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND D. HERTWIG, Secretary

JUNKET TABLETS (NOT SWEETENED OR FLAVORED) JUNKET POWDER (WITH SUGAR AND FLAVOR) VANILLA, CHOCOLATE, LEMON, ORANGE, RASPBERRY AND COFFEE FLAVORS

Manufacturer—Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.

Description.—Junket Tablets: rennin tablets containing salt starch, calcium phosphate and rennin.

Junket Powder: rennin powder containing sucrose, flavor, calcium glycerophosphate, gum tragacanth or gum arabic. The flavors are respectively vanilla, orange and lemon oils, raspberry and coffee extracts, and cocoa. The orange, lemon and raspberry flavored powders are artificially colored with United States Department of Agriculture certified colors, and the coffee flavored powder with caramel color.

Manufacture.—Calves' stomachs (rennets) of tested milk coagulating strength from government inspected newly killed young milk fed calves are trimmed of fat and are either salted or blown up and dried. 'Green flat salted rennets' are prepared by slitting and stretching the stomachs out flat; they are piled with intervening layers of salt and allowed to drain; which treatment shrinks the fiber, whitens the rennets and dries them out for handling. 'Dried flat salted rennets' are prepared by drying salted rennets on racks at below 39° C. 'Blown and dried rennets' are prepared by drying blown up rennets below 39° C.

The 'flat salted' and 'dried blown' rennets are machine shredded, extracted with 10 per cent brine containing 0.2 per cent chloroform in refrigerated rooms; the brine extract is drawn off and is saturated with sodium chloride to precipitate the rennin which is separated out and pressed to remove free liquid. The 'press cake' is mixed with salt and dried in warm air; the resulting powder is used for making Junket Tablets. The 'press cake' admixed with milk sugar is used for Junket Powder.

The variously flavored Junket Powders are prepared by mixing the rennin powder and cane sugar with small amounts of calcium glycerophosphate with the respective flavoring ingredients. Definite quantities of the mixes are packed in packages such that one package will coagulate one pint of milk at 43° C. in from three to five minutes.

Analyses (submitted by manufacturer) —

	Tablets	Vanilla Flavor	Orange or Lemon Flavor	Raspberry Flavor	Coffee Flavor	Chocolate Flavor
Moisture	0.0%	0.2%	0.2%	0.2%	0.3%	0.8%
Ash		0.5	0.5	0.2	0.6	1.1
Sodium chloride	96.9					
Fat (ether extract)	0.0	0.1	0.1	0.1	0.1	3.9
Protein (N x 6.25)	0.7	0.2	0.0	0.1	0.3	2.5
Sucrose		95.0	99.0	98.0	96.8	83.0
Crude fiber						0.9
Undetermined	0.8	1.2	0.2	1.4	1.9	0.7
Caffeine					0.04	0.06
Theobromine						0.2
Starch	0.6					
Calcium phosphate	1.0					

Calorus.—Junket powder approximately 4 per gram, 114 per ounce.

Claims of Manufacturer.—For preparing plain 'junket' or junket with various flavors. A tablet or a package contains sufficient rennin to coagulate one pint of fresh or pasteurized milk in three minutes at 43° C. Finished dessert made from

one package of Junket Powder and one pint of milk provides about 500 calories (four servings) for the chocolate flavored powder about 560 calories. The active ingredient rennin transforms milk into custard-like milk-food or dessert.

Junket Tablets (not sweetened or flavored) For making milk-foods for invalids and children. Junket desserts, ice cream and cheese, also for preparing milk for infant feeding and special diets.

Junket Powder (sweetened and flavored) requires milk only for making flavored and sweetened milk desserts, ice cream, etc.

McCORMICK'S BEE BRAND BLACK PEPPER
McCORMICK'S BEE BRAND WHOLE
BLACK PEPPER

Manufacturer—McCormick and Company Inc, Baltimore

Description—Whole or ground black pepper (berry of *Piper nigrum* L.)

Manufacture—The black pepper is the dried fruit of a perennial climbing shrub. The berries are picked before fully ripe, sun dried on mats or over slow burning fires during which time they shrivel and become dark brown or black, are freed from twigs, leaves and foreign material and are exported to the company's packing plant, cleaned, ground and packed in tins.

Analysis (submitted by manufacturer) —

Moisture	per cent
Total ash	9.9
Acid insoluble ash	3.9
Volatile ether extract	0.5
Nonvolatile ether extract	1.7
Total nitrogen	8.0
Piperin nitrogen	2.1
Piperin	0.3
Protein nitrogen	6.4
Protein (N X 6.25)	1.8
Starch (diastase method)	11.3
Crude fiber	34.9
Carbohydrates other than crude fiber (by difference)	10.1
	55.1

Claims of Manufacturer—Conforms with the respective United States Department of Agriculture definition and standard.

HIGH GRADE QUALITY A FLOUR
(BLEACHED)

Manufacturer—Federal Mill Inc, Lockport, N. Y.

Description—A 'patent' hard winter wheat flour, bleached.

Manufacture—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with nitrogen trichloride (one fourteenth ounce per 196 pounds) and nitrogen peroxide.

Claims of Manufacturer—Intended for bread baking.

CLAPPS ORIGINAL LIVER SOUP
(LIVER, VEGETABLES, CEREAL, MEAT BROTH AND SALT)

Manufacturer—Harold H. Clapp, Inc., Rochester, N. Y.

Description—Strained cooked soup stock prepared from calf's liver, potatoes, tomatoes, carrots, unpolished rice, cabbage, celery, meat broth, whole grain barley, salt, onions and water. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture—Government inspected calf's liver is chopped fine and strained raw. The liver and Clapps Original Baby Soup are mixed in definite proportions, cooked, strained, jarred, capped and processed as described for Clapps Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

<i>Analysis</i> (submitted by manufacturer) —	
Moisture	per cent
Total solids	96.8
Ash	13.2
Salt (NaCl)	1.4
Fat (ether extract)	0.3
Protein (N X 6.25)	0.5
Crude fiber	3.3
Carbohydrates other than crude fiber (by difference)	0.2
	7.8

Calories—0.5 per gram, 14 per ounce.

Vitamins and Claims of Manufacturer—See Clapps Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

DOLE VACUUM PACKED HAWAIIAN FINEST
QUALITY PINEAPPLE (SLICED, CRUSHED,
TIDBITS AND HALF SLICES)

CORAL SEA, DISCOVERY, MAUNA LOA, PALM
ISLAND PARADISE, RECIPE SWEET
TREAT AND TREASURE
ISLAND BRANDS

Packer—Hawanan Pineapple Company, Ltd., San Francisco.

Description—Canned pineapple (slices, half slices, crushed and tidbits) packed in concentrated pineapple juice syrup with added sucrose. The same as Doles 1, 2 and 3. Hawanan canned pineapple products (THE JOURNAL, April 8, 1933, p. 1106 and April 29, 1933, p. 1338).

CLAPP'S ORIGINAL PUREE OF SPINACH
(ADDED SALT)

Manufacturer—Harold H. Clapp, Inc., Rochester, N. Y.

Description—Strained cooked spinach. A small amount of salt is added. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture—Purchased canned spinach is strained in an atmosphere of water vapor and subsequently treated as described for Clapps Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

The purchased canned spinach is prepared from spinach inspected to remove unsuitable material, sorted, passed through a washing reel, blanched with steam, again inspected, packed in cans with a salt solution and passed through a hot water exhauster to bring to 71° C. and remove absorbed air. The cans are sealed, processed at 116° C. for 100 minutes and immediately cooled.

<i>Analysis</i> (submitted by manufacturer) —	
	per cent
Moisture	95.4
Total solids	4.6
Ash	1.2
Salt (NaCl)	1.2
Fat (ether extract)	0.5
Protein (N X 6.25)	0.3
Crude fiber	1.2
Carbohydrates other than crude fiber (by difference)	0.5
	1.4

Calories—0.1 per gram, 3.0 per ounce.

Vitamins and Claims of Manufacturer—See Clapps Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

HOLSUM TWIN LOAF, SPLIT LOAF
HOLSUM BREAD, LONG LOAF

Manufacturer—The Holsum Baking Company, Morgantown, W. Va.

Description—White bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817), prepared from patent flour, water, dextrose, powdered skim milk, lard, yeast, salt, malt extract and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride, potassium bromate and corn starch.

SCOUT CABIN BRAND EVAPORATED MILK

Packer—Amboy Milk Products Company, Amboy, Ill.

Distributor—E. Bierhaus & Sons, Vincennes, Ind.

Description—Canned unsweetened evaporated milk, the same as Amboy Brand Unsweetened Evaporated Milk (THE JOURNAL, May 7, 1932, p. 1655).

POLAR BLAR FLOUR

Manufacturer—The New Era Milling Company, Arkansas City, Kan.

Description—An all purpose hard winter wheat patent flour.

Manufacture—Selected hard winter wheat is cleaned, scoured, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one twentieth ounce per 196 pounds).

Claims of Manufacturer—Intended for all baking purposes.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 30, 1933

THEORIES OF MUSCULAR CONTRACTION

In view of the importance of movement, the physiologist is intensely interested in the nature of the contractile processes in muscle by which so much of the body's activity is maintained. Even during the periods of utmost quiescence when the body seems to be entirely at rest, the contractions of the heart and of the muscles concerned with respiration never cease. An understanding of the way in which energy is transformed for the muscular functions is therefore of fundamental significance. Years ago the analogy of the combustion engine, in which the oxidation of fuel was a conspicuous feature, seemed to serve the purposes of explanation. The muscles were the organs in which food fuel of a suitable sort was somewhat mysteriously burned to produce movement. Incidentally, there came the discovery of the development of acids other than carbonic acid incident to the contractile process. Lactic and phosphoric acids found their way into the picture, and they were for a time dismissed as the "fatigue products" of muscle, with all the uncertainty bred of inadequate knowledge. Somehow they did not fit into any simple theory of oxidative action as a basis of muscular work, although lactic acid in particular always seemed to make its appearance in the tissues in unusual amounts when muscles were made to contract.

Presently the more intensive studies in this field led to conceptions somewhat comparable to the changes in a "chemical engine." They culminated in the so-called Hill-Meyerhof theory of muscular contraction, gaining for each of the scientists named a Nobel prize. The resulting hypothesis, based on the myothermic studies of Hill¹ and the chemical investigations of Meyerhof,² is formulated in the textbooks of the present day. According to a recent summary,³ the primary change in muscular contraction is the anaerobic breakdown of

glycogen to lactic acid, followed by oxidative recovery, during which the major part of the lactic acid is resynthesized to glycogen by the energy derived from the oxidation of the smaller part to carbon dioxide and water. The discovery of phosphocreatine by Fiske and Subbarow was followed by their hypothesis that the base liberated by the hydrolysis of this substance buffers the muscle against the lactic acid formed during contraction.

This generalization has recognized certain facts of experimental observation but it has never been accepted with universal acclaim by actual workers in the field of muscle biochemistry. One of the disconcerting aspects arose when, as the situation has been stated by Jacob and Wilma C. Sacks,⁴ Lundsgaard⁴ in 1930 found that muscles poisoned with iodo-acetic acid could perform a certain amount of work without the formation of any lactic acid, and that the phosphocreatine in these muscles was completely broken down during activity. This discovery obviously invalidated the hypothesis that the formation of lactic acid was the *sine qua non* of muscular activity and put the emphasis on the breakdown of phosphocreatine as the energy-yielding reaction. Lundsgaard proposed and Meyerhof and Hill accepted this hypothesis. The primary chemical change in muscle contraction is the (hydrolytic) breakdown of phosphocreatine, the recovery process, which may be oxidative or anaerobic, is the resynthesis of this phosphocreatine, the energy for the anaerobic resynthesis is furnished by the formation of lactic acid from glycogen.

Experimentation on contraction calls for resourcefulness. When a muscle is investigated apart from the body, its supply of oxygen and the normal removal of products of chemical change are interfered with. The chemical changes may be minute and therefore require new and delicate analytic procedures to measure them with adequate precision. Many possibilities, including the more recently recognized phosphocreatine, adenine phosphate and hexosephosphates, along with oxygen, carbon dioxide, phosphoric acid and lactic acid, have called for consideration. Amid a wealth of facts there has been a tendency to welter in assumptions.

One by one, modifications have been introduced into the original Hill-Meyerhof formulations. There is little justification to recount the details here except as some real novelty is presented. This seems to apply to conclusions based on recent investigations in the Pharmacology Laboratory of the University of Michigan Medical School at Ann Arbor.³ The theory of the essential chemical changes involved in the contraction of muscle is presented as follows. The fundamental process by which chemical energy is converted into muscular work is an oxidative, not an anaerobic, one. The substance oxidized is derived from glycogen, presumably it is lactic acid, which is formed in small amounts necessary to maintain a relatively constant

¹ Hill, A. V. *Muscular Activity*. Baltimore: Williams & Wilkins Company, 1926.

² Meyerhof, Otto. *Die chemischen Vorgänge im Muskel*. Berlin: Julius Springer, 1930.

³ Sacks, Jacob and Sacks, Wilma C. *The Fundamental Chemical Changes in Contracting Mammalian Muscle*. *Am. J. Physiol.* **105**: 151 (July) 1933.

⁴ Lundsgaard, Einar. *Biochem. Ztschr.* **217**: 162 (Jan. 7) 227: 51 (Oct. 16) 1930.

supply During the initial stages of extreme exertion, before the circulation has had time to adjust itself, certain secondary anaerobic processes are employed to furnish part of the energy for contraction. These secondary reactions are the formation of lactic acid from glycogen in massive quantity and the formation of hexosephosphate from glycogen and phosphocreatine. The first of these is the reaction which Hill and Meyerhof formerly considered to be the primary change. The second is a statement of the role of hexosephosphate in the physiology of voluntary muscle. To buffer the muscle against the large amounts of lactic acid formed in this initial period of asphyxia, two principal mechanisms are provided: the hydrolysis of phosphocreatine and the neutralization of alkali-protein. The first of these is Fiske's theory, which is accepted without reservation, the second has been established by the work of Hill and Meyerhof. As the circulation adjusts itself to the increased demand and the primary oxidative process supplies the necessary energy, any surplus potential energy is utilized to resynthesize the lactic acid and hexosephosphate to the glycogen from which they were derived. The problem of muscular fatigue remains as unsettled and intriguing as it has been throughout the "modern period" of physiology. The precise answer to the question of how to combat the weariness of work cannot be offered until the true cause of fatigue is discovered. The shortening of the hours of labor under the newer governmental provisions for the industries makes rest—the oldest of recommendations—the best prescription for fatigue.

DIPHASIC TUBERCULOSIS

The recent demonstration that many species of pathogenic bacteria "mutate" or "dissociate" into two or more morphologic variants on artificial culture mediums, and that the different pleomorphic "phases" of the same micro-organism are at times of widely different virulence and antigenicity, has introduced a new element of uncertainty into specific antibacterial therapy. For example, future clinicians may have to deal with such complexities as the "mucous membrane phase," "alveolar phase" and "septicemic phase" of the pneumococcus, and with primary, secondary and perhaps tertiary antigenic variants of numerous other specific pathogenic agents. A few such antigenic phases have been definitely established. The successive waves of relapsing fever, for example, are of qualitatively different specific antigenicities. Similar qualitative differences are well established between the primary and tertiary phases of infection with *Spirochaeta pallida*. Both of these micro-organisms, therefore, are definitely 'diphasic' in their biochemical specificities.

Although Thomas's¹ recent studies of the diphasic symptomatology of experimental tuberculosis in rabbits

carefully avoids any reference to the debatable question of antigenic mutation of the injected culture, his two symptomatologies strongly suggest that the tubercle bacillus is diphasic in its virulence and specific antigenicity. The same two phases of the tubercle bacillus are also suggested by the recently reported clinical studies of Rice, Orr and Reed² of Queens University Faculty of Medicine, Kingston, Ont., who have developed a new serologic test with which, they claim, the relative virulence (or antigenic phase) of the causative agents in different cases of pulmonary tuberculosis can be determined, with an 85 per cent coefficient of clinical certainty.

Numerous attempts were made by earlier investigators to develop such a prognostic test. Complement fixation studies, for example, indicated that about 85 per cent of all cases of pulmonary tuberculosis have readily demonstrable antibodies in the blood stream. These tests, however, failed to show any definite correlation between the antibody titer and the progressive or recessive nature of the disease. Even greater difficulties were noted in extrapulmonary tuberculosis, in which fully 50 per cent of all patients tested might show no demonstrable specific antibodies in the blood stream.

In their preliminary work, Dr. Rice and her colleagues immunized rabbits against heat-killed, virulent (or S) cultures of the tubercle bacillus and with the avirulent (or R) dissociates of the same micro-organism. The serums from the two series of immune rabbits were quite different in their relative reactivity to S and R antigens. The serums of animals immunized with S vaccines for example, reacted much more strongly with the S antigen than with the R antigen. The serums of animals immunized with R vaccines fixed about the same amount of complement in the presence of both S and R antigens. Serums from rabbits infected with living virulent S cultures were also tested and gave reactions which suggested that the infectious agent is diphasic in character. The relative reaction to S and R antigens changed during the course of the infection, the change being consistent with the belief that the initial acute, virulent phase of B. tuberculosis often changes to the secondary, avirulent phase during the course of the experimental disease. This observation is in line with Thomas's observed diphasic symptomatology.

Applying the same S/R ratio to one hundred clinical cases of pulmonary tuberculosis, the Canadian investigators noted a correlation between the S/R ratio and the clinical activity of the disease. In actively progressive pulmonary tuberculosis, for example, the S/R ratio was at times as high as 29, with an average ratio of 1.73. In slowly progressive cases, 80 per cent of the serums had ratios below 1.73, the average being 1.47. In the stationary or relatively inactive cases the average

¹ Thomas, K. M. *J. Exper. Med.* 56: 185 (Aug.) 1912.

² Rice, Christine F., Orr, J. H. and Reed, G. B. *J. Immunol.* 25: 19 (July) 1933.

was 1.22. In a summary of their clinical studies they conclude that an S/R ratio below 1.5 is diagnostic of relatively inactive tuberculosis, with an 85 per cent degree of clinical certainty. An S/R ratio above 1.5 is almost equally pathognomonic of actively progressive tuberculosis.

The Canadian investigators, of course, recognize that their S and R antigens were selected on a purely arbitrary basis. They therefore merely suggest their present "virulence coefficient" as a serologic ratio worthy of extended clinical study.

Current Comment

THE TOXICITY OF DINITROPHENOL

The tremendous activity that dinitrophenol has in stimulating metabolism and producing hyperthermia was referred to somewhat extensively in *THE JOURNAL*, July 15. In that issue there appeared an article on the actions and uses of dinitrophenol by Cutting, Mehrtens and Tainter. The Council on Pharmacy and Chemistry also published a preliminary report on the same subject, while *THE JOURNAL* itself called editorial attention to the matter. It has been shown that dinitrophenol enormously accelerates cellular metabolism, and it has been proposed that the substance be used clinically in the treatment of conditions in which acceleration of the metabolic rate may be of value. The Council on Pharmacy and Chemistry in its preliminary report emphasized, however, the limitations to and the possible dangers from the clinical use of this drug and urged that it be used only under strictly controlled conditions. The editorial added emphasis to the same point. Elsewhere in this issue Anderson, Reed and Emerson of San Francisco report on the toxicity of dinitrophenol, and they, too, stress the dangers inseparable from its use. These authors have used dinitrophenol clinically in fourteen cases of obesity, in one of which a severe toxic reaction was encountered. A report of this case is incorporated in their article. It is significant that these authors conclude that it is yet to be demonstrated that dinitrophenol is as safe and satisfactory for weight reduction in human beings as other methods in common use. By a coincidence, San Francisco papers of August 28 reported the death of Dr. Hans Gessnar, a graduate of the University of Vienna, who took an overdose of dinitrophenol with the idea of reducing his weight and, as the paper popularly put it, was "literally cooked to death." It is to be expected that, with the craze that has in the past few years affected the American public, and especially the feminine contingent thereof, for short-cuts to the sylph figure, proprietary products will begin to appear having for their essential drug dinitrophenol. One is already on the market, put out by the R. R. Rogers Chemical Company of San Francisco under the name "Nov-Ben-ol." This preparation is advertised both to physicians and to the public. According to advertising

matter on Nov-Ben-ol, it is a "Magnesia Nitroxybenzol product and is sold in package of 120 3-grain capsule (33-day treatment) through your physician and the drug trade." It appears, too, that the stuff is also being advertised over the radio. The dangerous possibilities of such exploitation should be obvious.

BERYLLIUM RICKETS

Although scarcely more than a decade has elapsed since in 1922 the existence of a specific antirachitic factor, vitamin D, was clearly established, the importance of this substance and of the comparatively potent ultraviolet rays now looms large in all discussions of rickets. Considerations of this long known disorder, for which there are records that hark back to almost the beginning of the Christian era, nowadays almost always revolve round alleged deficiencies of calcium phosphorus or vitamin D, individually or collectively. It is quite surprising, therefore, to learn that a condition closely resembling if not actually identical with rickets can be produced by inclusion of certain noxious substances into the diet. This is, at least, the situation exemplified by so-called beryllium rickets, recently described by the Canadian investigators Guyatt, Kay and Brannon¹ of the University of Toronto. What they have discovered is purely an outcome of the experimental laboratory. The larger significance of beryllium rickets lies in the light it throws on some of the factors that really determine the genesis of faulty bone metabolism and growth. It was observed, in experimental animals under carefully controlled conditions, that the inclusion of small amounts of beryllium carbonate in the ration resulted in bone lesions having distinct similarities to those of rickets in the same species. The severity of the manifestations bears an approximate relationship to the amount of beryllium ingested. The mineral content of the bones is much diminished. Roentgen and histologic examinations also reveal almost complete failure of the characteristic mineralization. Although beryllium has many points of chemical resemblance to calcium, it does not appear to be deposited in appreciable quantities in the bones. One of the most striking features of the experimental condition is the greatly reduced inorganic phosphorus content of the blood plasma. The explanation is probably to be found in a diminished absorption of phosphate. Any phosphate going into solution in the fluids of the intestine, or liberated by enzymic hydrolysis of phosphoric esters, will, as the Canadian biochemists have pointed out, be immediately precipitated by the beryllium ions resulting from the solution of the basic carbonate in the gastric juice and will thus be rendered unavailable for absorption through the intestinal wall. The resulting type of bone lesion is not preventable by cod liver oil or by administration of viosterol, nor is it amenable to the anti-rachitic influence of ultraviolet irradiation.

¹ Brannon, H. D., Guyatt, B. L., and Kay, H. D., *J. Biol. Chem.* 92: vi (June) 1931. Guyatt, B. L., Kay, H. D., and Brannon, H. D., *Beryllium Rickets*, *J. Nutrition* 6: 313 (July) 1933.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8 55 to 9 o'clock, central standard time, over Station WBBM (770 kilocycles, or 389 4 meters)

The subjects for the week are as follows

October 3 Mineral Waters
October 5 It May Be Loaded

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

October 7 Too Much Sugar

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

CALIFORNIA

Poisoning from Arsenic on Vegetables—The illness of seventeen patients at Los Angeles Convalescent Home, Montebello, September 19 was traced to arsenic spray used on green vegetables furnished the home the Chicago Tribune reported. Nine other cases of vegetable spray poisoning were recorded in different sections of the city and county it was stated.

University News—A new building costing about \$32 000, has recently been completed at the College of Medical Evangelists. The basement of the new structure will house a museum, and the first and second floors the clinical laboratory of the White Memorial Hospital and space for research work. —Dr Guy L. Hunter adjunct professor of gynecology, Johns Hopkins University School of Medicine Baltimore, conducted a clinic at the University of California Medical School August 17. Dr John Ruhrah professor of pediatrics University of Maryland School of Medicine Baltimore addressed the faculty and students of the university September 13 on the history of poliomyelitis. Dr Charles Weiss lecturer in pediatrics at the school will open a course of twelve lectures October 5, on recent advances in bacteriology and immunology. —Dr Edwin G. Zabriskie professor of clinical neurology Columbia University College of Physicians and Surgeons New York conducted a clinic in Lane Hall Stanford University School of Medicine San Francisco July 26.

FLORIDA

Whitehurst Dies in Prison—Tyree C. Whitehurst, aged 61 died in the federal penitentiary at Atlanta, September 10 of heart disease. Whitehurst was serving a five year sentence for using the mails to defraud and representing himself as a physician. On a previous conviction of practicing medicine without a license he was given a sentence of a year and a day in the state prison at Raiford. No records have been found to confirm Whitehurst's claim that he was a doctor of medicine. (THE JOURNAL June 24, p. 2024)

IDAHO

Spotted Fever—Forty-eight cases of Rocky Mountain spotted fever have been reported in Idaho during the current season, with six deaths.

ILLINOIS

Commission to Study Encephalitis—The governor recently appointed a commission of representatives of the Illinois State Department of Health to study the current outbreak of encephalitis in St. Louis. The four physicians are Drs. Hubert S. Houston, Springfield; Sandor Horowitz, Peoria; Henry Reis, Belleville; and William F. Grayson, Granite City.

Public Lecture on Mental Health—Dr. Charles F. Read, managing officer, Elgin State Hospital will deliver a public

lecture in the Illinois Host House, A Century of Progress, October 11, at 11 a. m., on Mental Health in the Home. The lecture is sponsored by the women's auxiliaries to the Illinois State Medical Society and the Chicago Medical Society. Luncheon at \$1.35 will be served in the Trustees Lounge. Reservations for luncheon should be made with Mrs. William R. Cubbins, 425 Arlington Place, Chicago, before October 8.

Society News—Dr. Thomas P. Foley, Chicago addressed the Will-Grundy County Medical Society at Joliet September 20, on medical legislation. —Dr. John J. McShane, Springfield addressed the Morgan County Medical Society, September 14 on epidemic (lethargic) encephalitis and Dr. Hubert S. Houston, Springfield, tuberculin testing of children at the state fair. —At a meeting of the De Kalb County Medical Society in Sandwich September 28 Dr. Clement R. Martin, Chicago spoke on anorectal diseases. —A joint meeting of the Fulton and Schuyler county medical societies September 6 was addressed by Drs. John De J. Pemberton and Frank J. Heck, Rochester, Minn. on Rational Treatment of Hyperthyroidism and Diagnosis and Treatment of Pernicious Anemia, respectively. —Dr. Joseph C. Doane, Philadelphia, addressed the staff of the Paris Hospital, Paris, September 7 on Effect of Opium on the Commerce Literature, Medicine and the Morals of the World.

Chicago

Dr. Meyer Will Give Gehrmann Lectures—Karl F. Meyer, Ph.D. director George Williams Hooper Foundation and professor of bacteriology, University of California Medical School, San Francisco, will deliver the 1933 Gehrmann lectures of the University of Illinois College of Medicine. The lectures will be given at the college, room 423, at 4 p. m. Dr. Meyer's subjects will be:

October 16 Undulant Fever, Bang's Disease and Malta Fever
October 17 Equine Encephalomyelitis
October 18 Psittacosis

IOWA

Contract Practice—The definition of contract practice and the statement used as the basis for all decisions regarding the status of contracts as rendered by the Judicial Council of the American Medical Association, were approved in resolutions of the council of the Des Moines Academy of Medicine and the Polk County Medical Society adopted August 29. Contracts held by members are subject to review by the council for approval or rejection. The decision of the council shall be final as regards the contract and also the membership status of any member engaged in contract practice.

Society News—Dr. Arthur H. Parmelee, Oak Park, Ill., will address the Linn County Medical Society October 12 on 'Complications and Care of the New-Born'. —At a meeting of the Des Moines Academy of Medicine and the Polk County Medical Society in Des Moines, September 26 the speakers were Drs. Walter D. Abbott and George A. May on 'Diagnosis and Treatment of Head Injuries' and 'Practitioner's Problems in Middle Ear Disease' respectively. —Drs. Charles D. Fenton and E. Gilfillan, both of Bloomfield, spoke at the annual picnic of the Appanoose County Medical Society, August 17 at Centerville on 'Hereditary Diseases and Their Prevention' and 'The Heart in Pregnancy', respectively.

Graduate Courses—Faculty members of the University of Iowa College of Medicine Iowa City are conducting courses on pediatrics, obstetrics and internal medicine for the Polk County Medical Society. These courses which began September 27 will continue two hours a week for a period of ten weeks. Dr. Philip C. Jeans, professor of pediatrics, will discuss nutrition of the infant and child, infectious diseases, mental deficiency, nephritis and enuresis. Subjects covered by Dr. Everett D. Plass, professor of obstetrics and gynecology, will include management of normal pregnancy with certain of its complications, normal labor, normal puerperium, abortion and miscarriage, puerperal infection and toxemias of pregnancy. The course on internal medicine will be given by members of that department as follows:

Dr. Fred M. Smith Gastrointestinal Disorders
Dr. William D. Paul Diabetes, Diagnosis and Treatment
Dr. Elmer J. DeCowan Differential Diagnosis and Treatment of Diseases of the Lungs Causing Chronic Cough and Dyspnea with Particular Emphasis on Bronchial Asthma
Dr. Horace M. Korn Heart Disease Classification, the Diagnosis of Organic Heart Disease and Treatment of Congestive Failure
Dr. Willis M. Fowler Diseases of the Kidney Classification of Nephritis the Distinguishing Features of Each Type and Treatment
Dr. Clarence W. Baldrick Diseases of the Urinary Organ Classification, Diagnosis of Each Form and Treatment
Dr. James A. Greene Disease of the Throat Classification, Diagnosis of Hyperthyroidism (Toxic Adenoma and Grave Disease) and Hypothyroidism—Treatment

KANSAS

Outbreak of Food Poisoning—Sixty-five persons including interns, nurses and ten patients, were ill at Bell Memorial Hospital, Kansas City, the *New York Times* reported September 9. The outbreak was believed to be caused by either tainted fish or salad dressing. None of those stricken were in a serious condition, it was stated.

MARYLAND

Personal—Dr Eugene C. Peck has been appointed health officer of Garrett County, effective August 1, and also a deputy state health officer. Previously, Dr Peck was assistant health officer of Newton, Mass.—Dr Henry H. Clay, lecturer at the school of hygiene and tropical medicine in the public health division, University of London, was a recent visitor in Baltimore, studying the organization of public health administration.

Semiannual Meeting—The Medical and Surgical Faculty of Maryland held its semiannual meeting at Cumberland September 28-29, with the Allegany-Garrett County Medical Society acting as host. Dr Abbott R. Walker, Frostburg, president of the latter, gave the address of welcome and Dr J. Albert Chatard, president of the medical faculty, the response. The scientific program was as follows:

Dr William F. Williams, Cumberland. Agranulocytosis.
Dr Arthur H. Hawkins, Cumberland. The Ideal Cholecystectomy.
Dr Samuel M. Jacobson, Cumberland. New Form of Treatment for Acute Gonorrheal Urethritis in the Male.
Dr Norman I. Broadwater, Oakland. Acute Infectious Neuroneuronitis.

MINNESOTA

Lecture Course—The extension division University of Minnesota, opened a course of lectures for the Renville County Medical Society, September 19, with the following physicians participating:

Moses Barron. anemias classification and treatment.
Harry P. Ritchie. St. Paul. problems in reconstruction surgery.
Jennings C. Itzenberg. abortions.
Henry E. Michelson. skin.
Myron O. Henry. intracapsular fractures of the hip.
Jay Arthur Myers. tuberculosis.
Frederick C. Rodda. differential diagnosis of meningitis and simulating conditions.
Arthur F. Bratrud. treatment of hernia by injection method.
George R. Dunn. fractures.
Edgar J. Huencens. differential diagnosis and treatment of convulsions in childhood.

Violation of Basic Science Law—Gerhard John Stramer, an itinerant quack, pleaded guilty to practicing medicine without a basic science certificate, August 18, in the district court at Anoka. Stramer had been calling on people suffering from arthritis, neuritis and similar ailments selling a medicinal preparation called "Trunox." In July he paid a fine of \$50 and costs, following his arrest and plea of guilty to peddling without a license at New Ulm. He was ordered to leave the state which he did, but he returned in the vicinity of Elk River. In the recent charge he was given a suspended jail sentence of six months on his promise to refrain from further violating the laws of Minnesota and to return to Watkins, Iowa, where his family lives. He is a native of Norway, Iowa. Stramer had come to Minnesota from Pasco, Wash. about May 15. He is said to be a garage mechanic by trade.

MISSISSIPPI

Society News—The Issaquena-Sharkey-Warren Counties Medical Society, Vicksburg, was addressed September 12 by Drs. Guy C. Jarratt on congenital syphilis, Edley H. Jones, allergic nasal conditions, and Francis Michael Smith, essentials in smallpox prevention.—At a meeting of the Tri-County Medical Society at Tylertown recently speakers included Mr. Thomas P. Brady, Brookhaven on 'The Law of Negligence and Malpractice as Applied to Physicians'; Dr. Robert H. Brumfield, McComb 'Treatment of Abdominal Pain'; Dr. William H. Frizell, Brookhaven, 'Our Legal Defense'; and Dr. Oscar N. Arrington, Brookhaven 'Significance of Abdominal Pain'.—A recent meeting of the Montgomery County Medical Society was addressed in Lexington among others, by Drs. Robert E. Wilson, Greenville and William H. Curry, Eupora on autogenous vaccine in pyelitis and congenital pyloric stenosis, respectively.

MISSOURI

Health at St. Louis—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended September 16 indicate that the highest mortality rate (158) appears for St. Louis and for the group of cities as a whole 95. The mor-

tality rate for St. Louis for the corresponding period last year was 104, and for the group of cities, 93. The annual rate for eighty-five cities for the thirty-seven weeks of 1933 was 109 as against a rate of 112 for the corresponding period of last year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population, may tend to increase the death rate.

NEW YORK

Hospital News—A new hospital of twenty-four beds for adults, two for children and eight bassinets was opened, August 10, at Catskill. This is said to be the first general hospital service in Greene County. Dr. George L. Branch is chairman of the medical board of the institution, which will be known as the Greene County Memorial Hospital.

District Meeting—The annual meeting of the first district branch of the Medical Society of the State of New York will be held at Grasslands Hospital, Valhalla, N. Y., October 11. The scientific program will be devoted to tuberculosis, with Drs. Howard Lilienthal and J. Burns Amberson, Jr., New York, as speakers, and the heart, with Drs. James F. Rooney and Frederick C. Conway, Albany, and Lewis M. Hursthal, Boston, as speakers. Dr. George C. Adie, director of surgery at Grasslands, will present an operative clinic and case demonstration in chest surgery. At the luncheon a symposium on state society problems will be presented by Drs. Frederick H. Elmhurst, Syracuse, and Daniel S. Dougherty, New York, president and secretary, respectively, of the state society, and Orrin S. Wightman, New York, editor of the *New York State Journal of Medicine*.

Recommendations on Conduct of Medical Practice—The medical economics committee of the Medical Society of the County of Nassau after a study of the report of the Committee on the Costs of Medical Care and of the medical situation in Nassau County, has issued recommendations concerning medical practice. The committee concluded that no fundamental changes are needed but that certain changes that will bring medical practice in line with modern social and economic conditions are necessary. First the committee urged the formation of a county health unit and the adoption of the 'Detroit plan' of cooperation between the health department and practicing physicians. Continuance and development of the extension of welfare aid for illness with advice and cooperation of the medical society were also recommended. In this connection it was suggested that hospital insurance plans be studied immediately. Other recommendations dealt with representation of physicians on hospital boards and health departments and the control of qualifications for specialists.

New York City

Personal—Dr. Leopold Lichtwitz, formerly of the Rudolf Virchow Hospital, Berlin, has been appointed chief of the medical division of Montefiore Hospital, succeeding Dr. Bernard S. Oppenheimer, who resigned to devote more time to his duties at Mount Sinai Hospital. Dr. Lichtwitz will serve on a part-time basis.—Dr. Aaron S. Blumgarten, chief of the department of endocrinology, Lenox Hill Hospital, will give twelve lectures on endocrinology at the New School for Social Research, 66 West Twelfth Street, beginning October 6.

Window in Cathedral—The first stained glass window to be completed for the Cathedral of St. John the Divine represents the "Glorification of Healing, Physical and Mental," according to a recent description in the *Boston Transcript*. The window, which was to be set in place during the past summer, is 26 feet high and was to be set 20 feet above the floor of the church. The design is composed of medallions geometrically arranged. In the center are representations of the biblical miracles of healing, with subsidiary compositions giving an outline of medical history from Imhotep to the present. The figures include Hippocrates, Galen, Avicenna, Pasteur, Lister, Florence Nightingale, Morton, Father Damien and Edith Cavell.

Prolongation of Life of Diabetic Patients by Insulin—A study of persons who have died of diabetes in New York since 1903, reported in the bulletin of the city health department, shows that the introduction of insulin in 1922 has brought about a definite lengthening of the lives of persons with the disease. In making the compilation, the "median age" which represents the age to which exactly one-half of all the persons lived whose death was registered in any particular year, was used instead of the average age. The median age at death for men rose from 56 in 1903 to 61.5 in 1932, that for women rose

from 59.5 in 1903 to 62 in 1932. The average age was also computed and showed an increase from 51.3 to 60 for men and from 57 to 62 for women.

NORTH CAROLINA

Society News—Physicians of Charlotte arranged a practical course in general medicine for practitioners of the state September 4-7. A variety of subjects was included in the discussions, which were led by about thirty Charlotte physicians. No fee was charged.—Dr. Gibbons W. Murphy addressed the Buncombe County Medical Society, Asheville, July 3, on "Giant Cell Tumor of the Spine."

OHIO

Hospital Anniversary—The fiftieth anniversary of the Women's and Children's Hospital, Toledo, will be celebrated October 6. The occasion will also mark the twenty-fifth anniversary of the service of Dr. Walter W. Brand as chief of staff. Clinics will be held in all departments of the hospital in the morning, and the afternoon will be devoted to ward walks and demonstrations by special departments. Dr. Wingate Todd, Henry Willson Payne professor of anatomy Western Reserve University School of Medicine, Cleveland, will be the speaker at an evening meeting at the headquarters of the Toledo Academy of Medicine. His subject will be "Child Development."

Personal—The Hardin County Medical Society held a special meeting and dinner at Spring Grove September 21, in honor of Drs. William N. Mundy, Forest, and James S. Hedrick, Dunkirk, who have completed fifty years in the practice of medicine.—Dr. George T. Blydenburgh, Kings Park, N. Y., has been appointed director of the department of student health at Ohio Wesleyan University, Delaware.—Dr. Forest C. Haney, Columbus, was elected president of the Ohio State Medical Golfers' Association at the recent annual meeting in Akron.—Dr. John H. Hayes, Columbus, of the state department of health has been designated health commissioner of Mansfield to serve during the absence of Dr. Millard C. Hanson, who will spend a year studying at Yale University under a fellowship from the Rockefeller Foundation.

Physicians of Northwestern Ohio to Meet—The eighty-ninth annual meeting of the Northwestern Ohio Medical Association will be held in Tiffin October 3. On the program will be the following physicians:

Donald Putnam Abbott, Chicago, Differential Diagnosis and Treatment of Diarrhea.

John W. Carmack, Indianapolis, Sinusitis in Children.

George M. Curtis, Columbus, Iodine Metabolism in Goiter.

Carroll S. Wright, Philadelphia, General Treatment of Syphilis.

Philip Lewin, Chicago, Arthritis.

Descum C. McKenney, Buffalo, Anorectal Problems in Everyday Practice—Their Management.

John D. Camp, Rochester, Minn., Roentgenologic Findings in the Less Common Lesions of the Upper Gastrointestinal Tract.

Dr. George E. Follansbee, Cleveland, chairman of the Judicial Council of the American Medical Association, will make an address at the banquet on "Medicine—A Profession or a Trade?"

OREGON

Personal—Dr. Elmer E. Goucher, McMinnville, was guest of honor at a meeting of the local chamber of commerce, on the occasion of his completion of fifty years in practice in the city.

Society News—Dr. William W. P. Holt, Medford, presented a paper on enuresis before the Jackson County Medical Society, Ashland, recently.—At a meeting of the Eastern District Medical Society at Ontario, August 26, speakers included Drs. James Tate, Mason, Seattle, on "Problems of Cholelithiasis," Richard B. Dillehunt, Portland, "Treatment of Injuries of the Ankle Joint," Arthur C. Jones, Portland, "Physical Measures of Use to the General Practitioner," and Albert E. MacKay, Portland, president of the Oregon State Medical Society, on work of the association.

PENNSYLVANIA

State Medical Meeting—Among the features of the eighty-third annual session of the Medical Society of the State of Pennsylvania at Philadelphia, October 2-5, will be a public meeting Wednesday evening, October 4. Dr. Morris Fishbein, Chicago, editor of *The Journal*, will give an address on "Changes in Medical Practice." Dr. Fishbein will also speak earlier in the evening at a dinner given by the Woman's Medical College of Pennsylvania to women members of the state society, on "The Renaissance of the General Practitioner."

The annual smoker will be held Tuesday evening at the Bellevue-Stratford Hotel and the annual golf tournament, Monday, October 2, at the Manufacturers Country Club at Oreland. The scientific program was noted in *THE JOURNAL*, September 23, page 1008.

PHILADELPHIA

Dr. Walter Lillie Comes to Temple University—Dr. Walter I. Lillie, associate in ophthalmology at the Mayo Clinic, Rochester, Minn., since 1921, has been appointed professor of ophthalmology at Temple University School of Medicine. Dr. Lillie is a graduate of the University of Michigan Medical School and the University of Minnesota Graduate School of Medicine and has been instructor of ophthalmology in the latter school.

TENNESSEE

Society News—Dr. Joseph A. Hardin, Sweetwater, was elected president of the East Tennessee Medical Association and Dr. Henry A. Callaway, Maryville, secretary, at the annual meeting in Knoxville, September 12. Among speakers were Drs. Lloyd E. Dyer, Greenville, presidential address on progress of medicine; Edwin L. Ellis, Maryville, relative value of infant foods; Robert C. Kimbrough, Madisonville, hypertension; Edward T. and Cecil Newell, Chattanooga, fractures of the lower third of the leg; Jefferson C. Pennington, Nashville, prostatic resection; and Fred W. Rankin, Lexington, Ky., cancer of the colon.—Dr. Edward T. Brading and John W. Wallace addressed the Washington County Medical Society, Johnson City, August 17, on "Pathologic Physiology of Nervous Disorders" and "Allergy in Children," respectively.

TEXAS

Society News—A symposium on ovarian physiology and pathology was presented before the Dallas County Medical Society, Dallas, September 28, by Drs. John L. Goforth, Gomer F. Goff, and Henry H. Turner, the latter of Oklahoma City. Dr. Wilmer L. Allison, Fort Worth, addressed the society, September 14, on encephalitis, and Dr. John V. Goode, on skin grafting.—Drs. Howard R. Dudgeon, Waco, and George W. McCoy, of the U. S. Public Health Service, Washington, D. C., addressed the Navarro County Medical Society, August 8, at Corsicana, on "The Role of Fibrous Connective Tissue in Disease and Typhus Fever," respectively. Corsicana recently carried out an intensive campaign to eradicate rats to combat the spread of typhus fever.

Bexar County Society in Permanent Home—The Bexar County Medical Society and the Bexar County Medical Library Association have recently acquired a new home in San Antonio. The building is a former private home in a beautiful residence section according to the *Texas State Medical Journal* with three large rooms for the library and a dining room on the first floor and an auditorium with a capacity of 250 on the second. The development of the medical library is attributed to the leadership of the late Dr. Frank Paschal, who began advocating it as early as 1900. The nucleus of the library was actually formed in 1912 though the movement to place it on its present basis was not made until 1919 when the society first acquired a building as headquarters for meetings and for the library.

VERMONT

State Medical Meeting—The one hundred and twentieth annual session of the Vermont State Medical Society will be held in Barre, October 5-6, at the state armory. The speakers will include:

Dr. Dean Lewis, Baltimore, President, American Medical Association.

Dr. Colin C. Stewart, Jr., Hanover, N. H., Neurofibromatosis in Children.

Dr. Frank R. Ober, Boston, General Aspects of Chronic Arthritis.

Dr. Howard W. Haggard, New Haven, Conn., The Function of the General Practitioner.

Dr. John M. Wheeler, New York, Exophthalmos as a Diagnostic Sign.

Dr. Hugh Auchincloss, New York, Infections of the Fingers and Hand.

Dr. Clarence H. Beecher, Burlington, Management of Certain Cardiac Disorders.

Dr. Irving Mayo, Jr., Westminster, Health of Normal Boys.

Dr. Lyman Allen, Burlington, president of the society, will deliver his official address Thursday afternoon, October 5, and Dr. John H. Blodgett, Bellows Falls, vice president, will give his address Thursday forenoon. A symposium on recent advances in medicine and surgery will be presented by the following Boston physicians: Drs. Gilbert Horrax, who will discuss intracranial lesions; Frank H. Lahey, thyroid diseases; Howard M. Clute, jaundice; and Lewis M. Hurvath, heart disease.

WISCONSIN

Periodic Payment Plans and Insurance Laws—The insurance commissioner of Wisconsin in response to a request from the Wisconsin Hospital Association has recently ruled that periodic payment plans for the purchase of hospital care fall under the insurance laws of Wisconsin and can be handled only by duly licensed insurance firms. Insurance has been defined in the Wisconsin courts as a contract whereby one party agrees to wholly or partially indemnify another for a loss or damage which he may suffer from a specified peril; the commissioner pointed out and the fact that the agreement is made between hospitals and individuals or groups of individuals does not take it out of the realm of insurance.

District Meetings—The annual meeting of the sixth councilor district of the State Medical Society of Wisconsin was held in Green Bay September 9 with Dr. Derm. Lewis Baltimore, President of the American Medical Association, as guest of honor. Other speakers were Drs. Max Cutler and Frederick H. Falls, Chicago, and Reginald H. Jackson, Madison. Dr. Lewis also made an address at the evening banquet and Dr. Ralph C. Hamill, Chicago, spoke on mental diseases of children. Among speakers at the summer meeting of the ninth councilor district of the State Medical Society of Wisconsin, Marshfield August 15 were Drs. Stanley J. Seeger, Milwaukee, on treatment of burns, Charles G. Sutherland, Rochester, Minn., roentgenology in diagnosis of bone lesions, and John S. Coulter, Chicago, physical therapy in treatment of fractures. The eleventh councilor district of the State Medical Society of Wisconsin and the Interurban Academy of Medicine held a joint meeting in Superior August 3 with the following speakers: Drs. Francis D. Murphy, Milwaukee, on high blood pressure, Stanley J. Seeger, Milwaukee, treatment of burns, Leo G. Rigler, Minneapolis, radiology, and Walter A. Fansler, Minneapolis, cancer of the rectum. Drs. Geza de Takats, Chicago, and Reginald H. Jackson, Madison, among others, addressed the annual meeting of the fifth councilor district of the State Medical Society of Wisconsin at Two Rivers September 7, on Buerger's disease and sacro iliac sprains, respectively.

GENERAL

Society News—Dr. William Wayne Babcock, Philadelphia, was elected president of the American Association of Obstetricians Gynecologists and Abdominal Surgeons at the recent annual meeting in Lucerne, Que.—Robert Jolly, superintendent of the Baptist Hospital, Houston, Texas, was chosen president-elect of the American Hospital Association at its annual convention in Milwaukee September 14. Dr. Nathaniel W. Faxon, Rochester, N. Y., was installed as president.

International Body to Coordinate Chemical Literature—The International Office of Chemistry has recently been created with headquarters in Paris with the following purposes: to render accessible to interested persons the existing literature of chemistry, to facilitate the registering, filing and diffusion of the literature now in course of production and to insure coordination between documentation in chemistry and that of other fields of scientific knowledge. The address of the new organization is 49, Rue des Mathurins, Paris 8.

Prevalence of Infantile Paralysis—Opening of public schools in Hackensack, N. J., was deferred indefinitely September 15, because of an outbreak of infantile paralysis. Theater managers agreed not to admit children under 16 for the same reason.—Fourteen cases were reported in Youngstown, Ohio, September 6 and opening of schools was delayed one week with the prospect of longer delay until the number of cases declined.—Schools in Summit Hill, Pa., were closed September 6, with the appearance of one case in the town.—Prevalence of the disease in Illinois was reported to be heavier than in 1932, with 118 cases since June 1 as compared with 89 cases for the corresponding period of 1932.—*Health News*, the bulletin of the New York State Department of Health, stated, September 4, that cases of infantile paralysis had been more numerous than usual in New York City since the middle of July. Eighty-eight cases were reported in New York in July and 307 cases in the first twenty-five days of August. This total is said to be larger than that for any of the past twenty years except the epidemic years of 1916 and 1931.

American Public Health Association—The sixty-second annual session of the American Public Health Association will be held in Indianapolis October 9-12 with headquarters in the Clavpool Hotel under the presidency of Dr. John A. Ferrell, New York, whose official address will be America's Contributions and Problems in Public Health. The second Institute on Health Education under the auspices of the public

health section, will be conducted October 7-9, under the direction of Dr. Igo Goldston, New York. Its theme will be 'The Psychology of Health Education'. The preliminary program of the public health meeting includes the following speakers:

Dr. Morris Fishbein, editor of *The Journal of Chicago Responsibility* for the Health Program.

Dr. Wilson G. Smith, Boston, and Dr. Frederick S. Leeder, Brockton, Mass., Epidemiology of Lobar Pneumonia.

Dr. Carey P. McCord, Cincinnati, Industrial Intoxication Follows Skin Sorption.

Dr. Wade H. Frost, Baltimore, A View of Environmental Sanitation in the Control of Communicable Diseases.

Dr. Charles Bolduan, New York, How Diabetes Became More Prevalent?

Dr. Claus L. Harmon, Cleveland, Death Rates from Puerperal Septicemia in Large Cities 1922 to 1929.

Dr. William Lloyd Aycock, Boston, Exposure as a Factor in the Ag.

Distribution of Measles, Diphtheria and Poliomyelitis.

Dr. William W. Bauer, secretary, Bureau of Health and Public Instruction, American Medical Association, Chicago, Team Play Between Public Health Nurses and the Medical Profession.

In addition to many other speakers, there will be symposiums among others, on the control of food handlers and the detection of carriers among them, public health engineering problems of large communities, microbiologic examination of food products, child health during depression years—economic aspects, filterable viruses, standard methods for the bacteriologic examination of milk, congenital syphilis. The annual banquet Wednesday will be a memorial session to Dr. Walter Reed and his associates on the Yellow Fever Commission. Speakers will be Surg. Gen. Robert U. Patterson, U. S. Army, and Dr. Frederick F. Russell, director of the International Health Board of the Rockefeller Foundation.

FOREIGN

Prices of German Periodicals—The German Booksellers Association has taken action concerning the prices of scientific periodicals. The following code of practice was recently agreed on:

1. Publishers of all scientific journals must specify the number of parts or volumes and the annual subscription price before the start of a new volume or publication year and must keep within that limit for the period agreed to.

2. Medical and scientific periodicals now published at inflated prices should be reduced not less than 20 per cent in price and contents for 1934.

3. The Boersen Verein finds the foregoing points of utmost importance and to ignore them would be to repudiate its obligations to its members.

4. The Association of German Universities expects that publishers, editors and contributors will abide by the specifications in paragraphs 1 and 2 and also will reject any material (especially dissertations) that really should not form part of a journal.

5. Both the Association of German Universities and the Boersen Verein are of the opinion that through limitation of the contents the size of the journals will be reduced. Also, the material offered should be more concise and so presented as to increase the value of the journal.

Government Services

U S Public Health Service

Surg. Octavius M. Spencer relieved at Chicago and assigned at Ellis Island.

Surg. Frank M. Faget relieved at Cleveland and assigned at Mobile. Asst. Surg. George G. VanDyke relieved at New London and assigned at El Reno, Okla.

Passed Asst. Surg. Noka B. Hon. relieved at New Orleans and assigned at marine hospital, Mobile, Ala.

Asst. Surg. (R) Henry H. Duke relieved at New York and assigned to U. S. Coast Guard Cutter *Seneca*, San Juan, P. R.

Medical Director Hugh De Valin relieved at Berlin, Germany, and assigned at American Consulate, Naples, Italy.

Surg. Lieuen M. Rogers relieved at Denver and assigned at Springfield, Mo.

Acting Asst. Surg. Raiford T. Warnock relieved at Portland, Maine, and assigned at marine hospital, Savannah, Ga.

Asst. Surg. Leroy E. Burney relieved at Cleveland and assigned at Hot Springs National Park, Ark.

Passed Asst. Surg. Albert T. Morrison relieved at Belfast, Ireland, and assigned at American Consulate, Dublin.

Surg. Albert E. Russell relieved at Washington, D. C., and assigned at marine hospital, Norfolk, Va.

Surg. William L. Smith relieved at Norfolk, Va., and assigned at marine hospital, Stapleton, N. Y.

Surg. Walter G. Nelson relieved at Ellis Island, N. Y., and assigned to American Consulate, Berlin, Germany.

Surg. Tully J. Liddell relieved at New Orleans and assigned at marine hospital, Chicago.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept 9 1933

Chemical Aspects of Life

At the annual meeting of the British Association for the Advancement of Science the president Sir Frederick Gowland Hopkins, professor of biochemistry at Cambridge and president of the Royal Society delivered an address entitled 'Some Chemical Aspects of Life'. Almost the founder of biochemistry and its most distinguished exponent he gave a brilliant and subtle interpretation. Life he said has one fundamental attribute—the arrest of the steady increase of entropy displayed by all the rest of the universe. But there is no evidence that life evades the second law of thermodynamics; it only interposes a barrier and dams up a reservoir of energy which provides a potential for its remarkable activities. The arrest of energy degradation in living nature is indeed a primary biologic concept. Every living unit is a transformer of energy; however acquired and biochemistry is deeply interested in the transformations. Its development belongs almost entirely to the present century. The president's special theme was the importance of molecular structure in determining the properties of living systems. He wished his audience to believe that molecules display in such systems the properties inherent in their structure even as they do in the laboratory of the organic chemist.

CATALYSIS

When colloid chemistry first brought its indispensable aid to biochemistry there was a tendency to discuss its bearing in terms of the less specific properties of colloid systems: phase surfaces, membranes and the like, without sufficient reference to the specificity which the influence of molecular structure wherever displayed, impresses on chemical relations and events. If the colloid structures did not display highly specialized molecular structure at their surface no reactions would occur, for here catalysis occurs. Were it not equipped with catalysts every living unit would be a static system. The catalysts of a living cell are the enzymic structures that display their influence at the surface of colloid particles or at other surfaces within the cell. Current research continues to add to the great number that can be recognized or separated from living tissues. A molecule within the system of a cell may remain inactive until at one such surface it comes in contact with an enzymic structure which displays certain adjustments to its own structure. Then it becomes activated and enters on some definite path of change. The president emphasized the high specificity of enzymic catalysis. The enzyme is in general adjusted to come into effective relation with one kind of molecule only. A living cell is the seat of a multitude of reactions which must be highly organized if it is to retain its identity. They must return to dynamic equilibrium after disturbance. Materials for the maintenance of the cell enter it from the environment. Discrimination among them is primarily determined by permeability relations but of deeper significance is the specificity of the cell catalysts.

COORDINATION OF THE TISSUES: THE ACTION OF THE NERVOUS SYSTEM

In the higher organisms tissues chemically diverse differentiated in function and separated in space react on one another through chemical agencies transmitted through the circulation which thereby coordinate the activities of the body as a whole. It is true that the nervous system is the highest organizing influence but this is exerted through the properties of chemical molecules. In the control of the heart by the vagus it has been

shown that the impulses liberate acetylcholine within the organ. The artificial injection of this substance reproduces in every detail the effects of vagus stimulation. Moreover evidence is accumulating that in the case of other nerves belonging to the same morphologic group as the vagus the same liberation of acetylcholine accompanies activity.

HORMONES

From substances produced temporarily and locally to translate for the tissues the message of nerves the speaker passed to those which carry chemical messages from organ to organ—hormones. They are produced continuously in specialized organs and each has its special seat or seats of action. The profound influence of thyroxine—a substance of no great complexity—in maintaining the harmonious growth of the body and controlling metabolism is well known. Epinephrine again a relatively simple substance maintains a number of important physiologic adjustments.

The most recent growth of knowledge in regard to hormones is the remarkable relations to sexual functions. When an ovum ripens and is discharged estrin is produced in the ovary and brings about changes that make fertilization secure. The new tissue of the corpus luteum also produces a special hormone to this end. These two hormones must act alternately. How is this brought about? Just as the higher centers of the brain coordinate the activities of the lower centers so hormones functioning at so to speak, a higher level of organization coordinate the activities of other hormones. The hormones of the anterior pituitary circulate to the ovary and control its activities.

VITAMINS

Hormones and vitamins should not be separated too widely in thought. It is true that the former are produced in the animal body, the latter supplied by the diet. But it has been shown that some species of animals can form vitamins which then must be regarded as hormones. Knowledge of the molecular structure of hormones and vitamins is growing rapidly and within a few years will be extensive enough to allow a wide view of the correlation between molecular structure and physiologic activity.

Color and the Vitamin Content of Butter

Dr. Lauder, president of the Agriculture Section, showed that the popular view that yellow milk is the best rests on a scientific basis. Milk and butter produced in summer when cows are at pasture, is yellow and this is associated with the presence of carotene or vitamin A. On the other hand winter milk produced when cows are stall fed is much whiter and its content of carotene or vitamin A is much lower. Incidentally this shows the importance of prohibiting the artificial coloration of milk and cheese. The problem is how to provide during winter food with the necessary amount of carotene or vitamin A. Experiments on the drying of grass at the agricultural research station of Berkshire have shown that grass can be rapidly dried at 200 degrees in a band with scarcely any loss of digestive or nutritive properties and what is more surprising, with only a small loss of carotene.

Decline of Intelligence Endangers Civilization

In the Section of Psychology Dr. Hurst of Cambridge argued that intelligence in Great Britain, the United States and other leading countries was declining so rapidly as to endanger civilization as the result of the falling birth rate. Recent intelligence tests in England, the United States, France, Holland and other advancing countries showed a rapid decline of the intelligence index of the population, namely the percentage of the five high grades of intelligence. This he attributed to the much higher decline of the birth rate among the more intelligent classes than among the less intelligent. He advocated imme-

date action on biologic lines. This could be financed by a transfer of a small portion of the large grants now expended on those of mediocre and low intelligence.

Eminent Sons of Elderly Fathers

In the Anthropological Section, Mr. A. F. Dufton maintained the interesting thesis that the older the father the more likely the son to attain eminence. He circularized fellows of the Royal Society, members of parliament and herd mistresses of schools on the ages of fathers when sons were born. He found that the proportion of sons who attained eminence was twice the normal when the father's age was 45 as when under it, ten times the normal when his age was 60, and fifty times the normal when it was 70.

PARIS

(From Our Regular Correspondent)

Aug. 16, 1933

The Rôle of the Chlorides in Operative Shock

Mr. Robineau has contributed an analysis of the conception that assigns great importance, in accidents due to postoperative shock, to hypochloridemia. Prof. F. Legueu, B. Fey, Palozoli and Mlle. Lebert have also presented a communication to the Academy of Medicine. According to Legueu in seeking to comprehend the mechanism of this source of postoperative disturbance one is surprised to find that the chlorides diminish simultaneously in the blood and the urine. In general, there is not a loss but merely an abnormal distribution of chlorides. Numerous experiments on animals (wounds of the liver, kidneys or muscles) have shown that the chlorides become localized in the region of the operative wound, where one finds a constant local hyperchloriduria, which progresses for several days after the operation, the time period varying with the importance of the traumatism, while the degree of traumatism explains largely the diminution of the chlorides in the blood. One may find here a reason for the gravity of certain operations that are particularly mutilating, such as prostatectomy. With the disturbance of the chlorides, the molecular equilibrium is disturbed, the kidney is affected and its secretions are reduced, and an azotemia is produced until the introduction of salts by an injection of hypertonic solution of sodium chloride reestablishes the equilibrium. This new fact explains a number of the accidents due to traumatic shock heretofore attributed to intoxication by nitrogenous substances. It affords a valuable therapeutic indication, since injections and lavages of a 30 per cent solution of sodium chloride are found to be valuable in all these states. The large postoperative injections of physiologic solution of sodium chloride, so much employed thirty years ago, are again coming into use.

Sterilization of Drinking Water

The problem of securing an abundant supply of pure drinking water for the villages of France is one of great interest to parliament. For many years this movement has stood at the head of various programs for the improvement of health, but in order to complete the program it would be necessary to appropriate several billion francs, and that appears to be out of the question for, according to law, the communes must furnish at least half of the funds needed for new installations, the government supplying the remainder. An endeavor is being made to discover more economical methods for the sterilization of water. Two methods are used at present. The first is ozonization which might easily be installed wherever electric power is cheap, for example, in mountainous regions. France has created so many plants for the production of electricity by water power that it has an excess of electric power current. The second method for the purification of water is that introduced by P. Bureau-Barilla and termed 'verdunization,' because

it was used to supply pure water to the army that defended Verdun during the war. It consists in the addition of variable quantities of chlorine, depending on the condition of the water. The excess of chlorine is removed afterward by the use of a small quantity of potassium permanganate, if necessary. This method is economical and easy to install. Many cities have adopted it. The health commission of the chamber of deputies, on receipt of the report of Dr. Goujon, has pronounced in favor of verdunization. But the industrialists who were counting on furnishing the materials for ozonization have launched a campaign of opposition, supporting their contentions on the testimony of Dr. Roux, director of the Pasteur Institute, whose disinterestedness is unimpeachable. Dr. Roux has stated that ozonization is the most perfect method of purification because it destroys radically all living micro-organisms. He recognizes, however, from the objective point of view, the value of purification by means of chlorine when circumstances prevent the previous filtration of impure water. Dr. Goujon, who defends verdunization, has replied to Dr. Roux in a public statement in which he raises objections to ozonization. Goujon admits that ozonization is a perfect method, but only in the laboratory, as it requires the use of a gas that is thoroughly dry, which is not practicable in installations on a large scale. If the gas is not absolutely dry there develop compounds which may be dangerous. One of these compounds, nitrous acid, combines with choline in the human organism and forms a poison that may cause death, by arresting the heart. Doubtless the quantity formed in this case is too small to be fatal, but harm may result from quantities too small to be measured when it is ingested in drinking water. There is, therefore, no direct antagonism between the declaration of Dr. Roux and that contained in the report published by Dr. Goujon.

Vaccination Against Diphtheria

Prof. G. Ramon and his co-workers P. Nelis and J. Lacomble have introduced a new form of technic in vaccination against diphtheria, which they described in a communication addressed to the Société de biologie. Children who had positive Schick tests were subjected to antidiphtheritic vaccination in the form of two injections of 1 cc each of an anatoxin with a titer value of 30 antigenic units. The injections were given with an interval of three weeks. The Schick control test applied to the 222 children thus vaccinated proved negative in 99 per cent. Thus, whether one uses anatoxin having a potency of 20 units, in two injections of respectively 1 and 2 cc, equal to 60 units, or whether one vaccinates with two injections (1 cc each) of anatoxin with a potency of 30 units, or a total of 60 units, one realizes an advantage over the old technic (three injections of anatoxin of 10 unit potency), for the immunity as shown by the negative Schick test is conferred on virtually all the persons vaccinated, while only two injections are given in place of three.

Treatment of Rheumatism with Bee Venom

Prof. Maurice Perrin, of the Faculté de médecine de Nancy, and Mr. Alain Cuenot, have published a report on the action of bee venom on patients with rheumatism. Their purpose at first was to test the popular belief in this treatment, a belief that is ancient, being mentioned by Hippocrates. They began their research with great skepticism. Their surprise was great when they found that this action of bee venom, studied by several ancient authors, is bona fide. Their report covers twenty convincing observations bearing on arthritis deformans, articular rheumatism, arthritis, rheumatoid pains (also muscular), lumbago and sciatica. Their technic is simple. The bees, collected in a bottle placed before the opening in a beehive, are taken up one by one with forceps and placed in a cupping glass resting on a sheet of paper. When a sufficient number of bees

have been transferred, the cupping-glass is placed on the skin of the patient at the site chosen and the sheet of paper is quickly withdrawn. The bees immediately begin to sting, but the pain caused by the stings is much less in a person affected with rheumatism than in a normal person as has been observed for a long time. While the stings must be applied to the painful spot, the action of the venom may be exerted *a distance*. The treatment often requires two months. Thirty bees stinging the patient at one sitting, every three days, constitutes an adequate treatment. Perrin has secured a solution of bee venom, which can be used hypodermically with the same results. With flamed forceps he extracts the venom sacs and transfers them to a receptacle with absolute alcohol. It is later dried in a vacuum and preserved in an ampule of physiologic solution of sodium chloride, in which the venom quickly dissolves.

BERLIN

(From Our Regular Correspondent)

Aug 21, 1933

New Regulations Concerning Vivisection

In 1930, new regulations were established in Prussia, which permitted experiments on living animals only for purposes of important research, and then only under prescribed conditions, with avoidance of superfluous experiments for demonstration purposes, for which film presentations might be substituted. All serious-minded scientific investigators supported this ministerial order (THE JOURNAL, Aug 13, 1932, p 574).

August 17, Goring, chairman of the Prussian ministerial cabinet, issued an order to go into effect immediately that "vivisection of animals of whatsoever species is prohibited in all parts of Prussian territory. The chairman of the cabinet has instructed the ministries to present to him without delay the text of a law incorporating this provision. Until the promulgation of this law persons who engage in vivisection of animals of any kind will be removed to a concentration camp." The applications to serious scientific research will be defined and explained in the near future. Bavaria, also has prohibited vivisection. It is generally understood that these prohibitions are to be regarded as the prologue to a corresponding federal law for the protection of animals, the elaboration of which is already under way by the federal ministry of the interior and the federal bureau of health. In the meantime the basis of application will be that necessary diagnostic and therapeutic tests on animals, such as insulin control and the diagnosis of renal tuberculosis, will be permitted. Medical research will have to wait to be sure, for the proclamation of the new legislation. In an announcement of the federal minister of the interior, it is expressly stated that 'consideration will be given to the requirements of science.

The Physiology of Work

At the convention of the Kaiser-Wilhelm-Gesellschaft zur Forderung der Wissenschaften Professor Atzler the director of the Kaiser-Wilhelm Institut fur Arbeitsphysiologie in Dortmund, delivered an address that attracted wide attention. The province of the physiology of work is to teach a person engaged in a fixed occupation how he can utilize his energy to the fullest extent without fearing that he will wear out prematurely. In the case of heavy physical work the problem is comparatively simple, the solution being reached by establishing with the aid of the respiratory apparatus the most favorable work load and the most favorable work tempo for every type of work, for example hammering, shoveling or the lifting of heavy weights. These computations having been made one has the basis for reckoning the length of the necessary rest periods. The problem is more difficult in the case of light easy work in which one group of muscles after the other becomes charged with fatigue products and in which particularly the nerve

centers are subjected to a severe strain. In this type of work, fatigue injuries from which one may never completely recover will sometimes result. In order to avoid such injuries one must correctly adapt the working intensity to the capacity of the human organism, which fluctuates according to definite "laws" and varies at different hours of the day. This capacity, or potential performance, usually rises gradually in the morning over a period of from thirty to sixty minutes, and then remains for several hours at its high level, whereupon it slowly declines but after a certain time rises again.

Great importance attaches, in all work, to the correct number, distribution and duration of the rest periods. As a rule it is advisable in independent work to allow rest periods amounting to at least 5 per cent of the work period. One can apply the rest periods uniformly by taking a few minutes off from each hour, or rest periods of varying length can be introduced during the forenoon and during the afternoon. In planning the arrangements of the work room or yard, one must pay attention not only to the correct location of work material and apparatus but also to what constitutes the best body position for the work in hand. Special importance attaches also to correctly constructed seats, to be used when needed. It is important that one avoids overstraining certain muscles. Above all, the whole work process must be so arranged that compensatory movements are possible. Many types of office furniture take no account of this need.

Tools and machines must be so constructed that the workman is protected against injury. Tools operated by compressed air, for example, may lead to joint injuries owing to their too strong recoil. By application of an ingenious method, it has been possible to register the recoil curve while the workman is working with the compressed air tools. Examination of these curves has enabled the manufacturers to make such changes in the construction as will eliminate the recoil.

It belongs to the physiology of work to take account of the diet of the workman. A scrutiny of the workman's diet, as Atzler pointed out, has shown that not only highly valuable protein substances and vitamin-containing foods are lacking but also, to a great extent, important mineral salts, particularly phosphates. An insufficient amount of milk and dairy products for example, is consumed.

"House Pharmacies" Prohibited

For decades, physicians in remote regions have been permitted, after a special examination to conduct a so called house pharmacy, in which they themselves were allowed to prepare the necessary medicines. This was a recognized exception to the pharmacy privilege. Now the Prussian ministry of the interior has ordered the cancellation of permits to conduct these house pharmacies. It is pointed out that transportation facilities have improved and that the reasons for house pharmacies seldom hold at present, as physicians can carry with them remedies needed in emergencies. It was explained that house pharmacies not only threaten the existence of the nearest regular pharmacies but also prevent young physicians from settling in rural districts since the older physicians who possess house pharmacies put them at a disadvantage. There is to be however a new investigation to discover whether the need for house pharmacies still exists. The pharmacies of a given district will be required to make arrangements for supplying the population with a reliable drug service.

Cadavers for Instruction Purposes

In previous letters mention has been made of the dearth of cadavers for instruction purposes. The Prussian minister of the interior now has issued an order the purpose of which is to supply the anatomic institutes at universities with the cadavers needed. Municipalities, local police boards and the authorities

of some other political districts are empowered to deliver to the institutes the bodies of persons who die in infirmaries without friends to claim the bodies and likewise when relatives or acquaintances of the deceased are unwilling to assume the costs of burial.

Lupus Patients and Their Capacity for Work

According to the new regulations of the lupus commission of the German Central Committee for Combating Tuberculosis lupus patients are to be regarded as incapable of working (1) in every case of rapidly progressing infection (2) if the disorder extends to large areas of the body or appears in numerous individual foci (3) in case of extensive involvement of the hands (4) in involvement of the lower limbs if freedom of motion is impaired (5) in involvement of the face which disfigures the patient or awakens disgust (6) in involvement of the lips, the buccal and the pharyngeal mucosae and extensive involvement of the nasal mucosa (7) if the sight has become impaired by spreading of the lupus infection to the eyelids and to the eyeballs (8) in the event of tuberculous complications affecting the lungs the glands or the bones. Advanced degrees of involvement of the types cited may establish not only temporary but even permanent incapacity to work or to pursue a gainful occupation. It is significant that the federal bureau of insurance as a supervising body has expressly declared that it has no objections to these criteria from the standpoint of health insurance.

THE NETHERLANDS

(From Our Regular Correspondent)

Aug 5 1933

Goiter in the Netherlands

The international bureau of hygiene has published a report by Dr. Josephus Jitta on the incidence of goiter in the Netherlands. Research on the incidence of goiter among recruits carried out by Dr. Brand in 1917 showed that 6 per cent of 45,000 recruits were affected. He found that goiter was almost nonexistent among recruits from the provinces of the North but that it was frequent in the provinces of Utrecht and Gelderland and presented an intermediate condition in the other provinces. In 1918 a research carried out in several cities among the grammar school children notably in Utrecht, Breda, Leeuwarden and Middelburg showed that goiter developed respectively in 66, 60, 35 and 17 per cent of the school children. A special commission was appointed to institute an inquiry. Endemic goiter does not, however, constitute an imminent danger for the public health. The disease should receive consideration chiefly because it is increasing and because it is found in regions where it was not supposed to exist. The number of cases of thyrotoxicosis are becoming less rare. The increase in the incidence of goiter may also be shown by the examinations of the soldiers. In 1925 seventy recruits out of every 10,000 and in 1930 150 recruits were declared unfit for military service by reason of goiter. The Netherlands commission attaches to the theory of the lack of iodine as the epidemiologic cause of goiter the greatest importance and hence the research was limited to the significance this substance may have in the general development of the disorder.

Mental Patients in the Dutch East Indies

In the *Geneeskundige Tijdschrift voor Nederlandsch Indie* Mr. Van Wulfften Palthe discusses the hospitalization of mental patients in the Dutch East Indies. The number of the mentally ill in the Dutch East Indies is not known exactly. Among the natives it is difficult to ascertain the exact percentage because only those in the advanced and dangerous stages are interested in treatment; persons with mild manifestations are unable to comprehend that it is to their advantage to be

interned for treatment. There are about 1,400 temporary internments each year. In these cases the selection is not made by psychiatrists. The patient enters first an institution in which he remains from three to four months, during this period about 7 per cent die. Of the remaining 93 per cent those who show evident signs of insanity remain; the others are dismissed. Syphilis is frequent and is often associated with mental disorders. The institutions for temporary detention and those for internment have been increased but without much improvement in the situation. The system should be radically changed. European methods cannot be employed, for in Europe every mental patient is interned, which in the Dutch East Indies is both impossible and useless.

Prophylaxis of Weil's Disease

The *Verlagen en Mededeelingen betr. de Volksgezondheid* publishes prophylactic provisions pertaining to Weil's disease. This disease, it is said, appears to develop chiefly in persons who have bathed in open waters and therefore occurs principally during the bathing season, as may be seen by a comparison of the incidence of the disease during the months of 1932: January 2 cases, February 1, March and April 0, May 1, June 4, July 8, August 36, September 124, October 24, November 4, December 3. The total number of cases for the year was 207, 16 of which had a fatal issue, constituting a mortality of 7.7 per cent. Sporadic cases occurred in all parts of the country. Prophylaxis should be centered on the summer season to prevent the infection of bathers in the occasional bathing places that is places outside the regular establishments. The precautions to be taken in this regard should be directed chiefly against rats. The measures adopted should therefore take into account the destruction of rats, the adoption of measures to deprive rats of their food supply and the prevention of rats nesting in the vicinity of bathing places.

New Cases of Syphilis in Northern Part of Netherlands

According to statistics of the university polyclinic of dermatology and of venereology at Groningen syphilis increased in the northern provinces of the Netherlands during the years 1926-1931. In 1926 nine cases of recent syphilis were recorded at the polyclinic or 0.49 per cent of the total number of new patients; whereas in 1931 ninety-three cases of recent syphilis were admitted for the first time or 5.31 per cent of all the new patients under treatment. V. During has held that syphilis always increases during a social crisis.

The National Bureau of Anthropology

The first session of the Netherlands National Bureau of Anthropology was held at the Colonial Institute in Amsterdam. Of special interest was the paper of Dr. de Mol van Otterloo concerning the use of opium in the Dutch East Indies. In 1930 16,000 opium smokers were registered by the excise office. This number comprises only the buyers of opium. The actual number of smokers must be at least twice that number, for many are content to use bootleg opium. Persons become addicted to opium for different reasons: to diminish pain, to break up a cough, to dispel fear and for its stimulating effect. Once the habit is formed they smoke without any particular reason. Opium smokers foregather in groups. There are many sick persons among them, also many unreliable and neglectful heads of families.

Criminal Abortion

The journal *Mensch en Maatschappij* (volume 8 number 1) contains an article by J. Valkhoff on the increase of criminal abortion in the Netherlands, which is especially noticeable among the poorer classes owing to the economic conditions. Most of the abortions are induced by men or women without

medical intervention. In Amsterdam alone there are about 500 abortionists. In Rotterdam the conditions are about the same. In The Hague the proportion is smaller as it is chiefly a residential city. In the rural districts, abortion is not as common as in the cities. The total number of criminal abortions in the Netherlands is placed at 14,600 a year. The author thinks that this figure is too low.

The Airplane Ambulance

The first Netherlands airplane ambulance has recently been completed, an open 'two seater' having been transformed into a closed airplane. The transportation of patients by ambulance airplane can be effected only at regular aviation fields (Soesterberg, Gilze Rijen, Schiphol, Oldebroek, Harstkamp, Arnhem, Kamperheide, De Kooy, Vught, Venlo, Waalhaven, Flushing, Eelde, Eindhoven and Twente). Requests for such transportation (in emergency cases only) may be made through the Red Cross, Green Cross, White Cross and White Yellow Cross societies and these societies must apply in such cases to the commander of the aviation service in Soesterberg.

The Leprosy Crusade in Dutch Guiana

New regulations have been put into force for the prophylaxis of leprosy which abandon the system of segregation heretofore in use. Henceforth, what will be chiefly sought will be adequate treatment of the patients the latter being required to observe hygienic precautions. The three objectives of the organization are (1) the early detection of cases particularly among school children (2) gratuitous treatment of lepers in their homes or in dispensaries with supervision to see that hygienic instructions given them are carried out and (3) treatment in retreats of patients unable to provide for proper treatment at home. This hospitalization is temporary ceasing when the lepers are considered sufficiently improved or when the treatment may be continued at home. J. Lampe stated that the new leprosy service had already ferreted out 1107 cases of leprosy, 249 patients being cared for in the dispensaries of Paramaribo, 195 patients are being treated in their homes in the city or the rural districts of Dutch Guiana, 482 patients have been hospitalized.

ITALY

(From Our Regular Correspondent)

July 15 1933

Priority in Liver Therapy

The Consiglio nazionale delle ricerche has investigated the alleged priority of Prof. Pietro Castellino, director of the first Clinica medica in Naples, in the treatment of anemias by means of liver therapy. The committee that examined the scientific evidence pertaining to the claims was presided over by Professor Viola, clinical physician of Bologna.

From an account of experimental work published in 1912 by Dr. Pirera, assistant of Professor Castellino, it appears that the latter had administered for some time by mouth considerable quantities of liver sugar to patients, and that such administrations proved highly beneficial. Such therapy was based on the principle that the liver elaborates and throws into the blood stream substances that stimulate the bone marrow, increasing in a most notable manner its activity. Experiments performed by Dr. Pirera on rabbits rendered anemic showed that injections of liver extract induce a reparative hematopoietic activity of medullary origin much earlier and more intense than the spontaneous activity produced by venesection. There must be assumed, however, a function of the liver consisting in the elaboration of substances of the type of hormones which in small quantities exert a remote but strongly stimulative action on the bone marrow. In case of their absence as a result of a hepatic lesion there is a complete collapse of the

medullary function. Another conception based on these experiments was that of the existence of a special type of anemia, characterized by the fact of being associated with the miopragia of this special function attributed to the liver.

From the examination of the publications on the subject and the results secured by various research workers, the Consiglio nazionale delle ricerche concluded that the priority of the experimental demonstration of the efficacy of liver therapy in anemias belongs to Professor Castellino and to his co-worker Dr. Pirera (1912).

Vaccination Against Tuberculosis

The ministry of the interior has sent to the prefects of the provinces a circular letter on vaccination against tuberculosis, in which it is emphasized that this prophylactic measure the use of which was begun in Italy as early as 1903, is deserving of every consideration. The experimental stage now may be regarded as completed. The Federazione nazionale per la lotta contro la tubercolosi was asked to launch a publicity campaign and to establish rewards for physicians who used such vaccination. The provincial antituberculosis societies have now been requested by the ministry to favor every endeavor in this direction, it being pointed out that vaccines prepared with dead bacilli may be freely employed by all physicians whereas the use of other vaccines is permissible only in institutes and clinics that furnish adequate guarantees. All vaccinations against tuberculosis should be registered and the persons vaccinated should be carefully supervised by physicians.

The House of Rest for Physicians

The Sindacato nazionale dei medici has taken the initiative in the creation of a 'casa di riposo' for physicians to be erected in Rome on a site facing the Piazza Forlani, close by will be erected a therapeutic center for the benefit of aged physicians, preference being given to those who fought in the World War. In addition to personal gifts the Classe medica italiana has contributed 1,000,000 lire (\$72,000).

Meeting of Academy of Sciences

The Accademia delle scienze medico chirurgiche met recently in Naples, under the chairmanship of Professor Boeri. De Nunno spoke on neoplasms due to roentgen rays. Epitheliomas due to roentgen rays appear to arise from the deeper strata of the epidermis and the derma and to advance toward the bone. The epitheliomatous tufts are often surrounded by granulation tissue and bring about the formation of horn pearls by a process of parakeratosis or dyskeratosis. The reduction and the disappearance of the bone tissue are due to a process of lacunar resorption. The nervous tissue and particularly the nerve terminals have shown themselves to be extraordinarily resistant to roentgen rays. With regard to the pathogenesis of the roentgen epithelioma the observations of the speaker do not support the theory of Ribbert (isolation of the rete mucosum of Malpighi through the effects of proliferating dermic papillas) or that of Borst who ascribes to the rays an aspecific action provoking an inflammatory process with formation of ulcers that spontaneously develop into cancers. According to De Nunno being able to discover direct metaphasia of the malpighian cells at points that were not the sites of ulcers or of inflammatory processes points to a local action of the roentgen rays and furnishes a new contribution to the theory of irritation bringing such neoplasms near to those due to betel soot, tar or kringi (fire basket).

Lugli spoke of the relation between vasomotor rhinitis and anaphylaxis and emphasized that in many cases of vasomotor rhinitis neither clinical nor laboratory research supplies evidence that justifies belief in the anaphylactic nature of the disorder. The manifestations appearing rather as reflex reactions to stimulations of the nasal mucosa. The speaker holds that the reac-

tions following the introduction of antigens, and, especially, the production of antibodies, are regulated in a reflex manner by excitations of the cellular sensitivity. Sensitization experiments were carried out by the parenteral route in guinea-pigs under anesthesia. The speaker concluded that sensitivity is fundamentally important in controlling in a reflex manner the reactions that lead to the creation of anaphylaxis and immunity.

JAPAN

(From Our Regular Correspondent)

July 29, 1933

Longevity and Moderation

Dr Nakayama, a school hygienist of Gifu prefecture, after ten years of research has found a way to enjoy longevity. He sent cards to 10,000 people who are more than 80 years of age throughout the country in order to have them record the climate, circumstances, manner of living, hygiene, tastes, and other factors. He reports that living in cities decreases the life span and that aged women are much more numerous than aged men. The places where the aged are most numerous are listed in the following order: (1) a seaside village, (2) a village on an island near the mainland, (3) a town near the sea, (4) a village on a plateau, (5) a village in a level country, (6) a village among the hills, (7) a village in an isolated island, (8) a town in a level country, (9) a town on a plateau, (10) cities, (11) large cities.

The majority of these aged people had long-lived grandparents, parents, and brothers and sisters. They all had from three to five brothers or sisters. Ninety-three of a hundred married unrelated persons. They are found most in the middle classes, the lower classes rank second and the upper classes rank third. The majority proved to be the eldest son or daughter. Most of them were born when the fathers were between 26 and 30 years of age and the mothers were between 21 and 25. An unmarried person seldom enjoys longevity. The majority were agricultural workers; few followed industry, and government officials seldom enjoyed longevity. The aged mostly have a normal constitution, but some are corpulent and few are slender. A tall man lives long, but the short man does not. Seventy per cent of them have a strong frame. Baldness increases as the generation advances (grandfather, 27.8 per cent; father, 29.3 per cent; and the present persons 37.8 per cent). They now go to bed early and rise late. They generally have led a quiet life. They are not particular about what they eat. Half of them are drinkers but the women are all nondrinkers. In order to live long, one should live in the country or on a plateau. The standard of living should be that of the middle classes.

Increase in Infectious Diseases

From January to the end of July in the districts of Tokyo-fu, the number of cases of infectious disease amounted to 15,167, which is an increase of 3,366 over last year. The largest increase was 812 cases of dysentery, mostly in children from 3 to 7 years of age and one out of two patients died. There were 3,855 cases of diphtheria, an increase of 1,372. The sudden increase is chiefly due to the long drought that occurred. The beds in isolation hospitals in these districts are full. Later in the summer there are usually more cases and so the authorities are much troubled to find more beds. The death rate from diphtheria at present is 16 per cent.

Great Expansion of Sickness Insurance

The social bureau of the home office has planned a remarkable expansion of sickness insurance which has been limited to factory workers. The new plan intends to change the present voluntary application for insurance to compulsory joining. Families will also be included. Besides factory workers insur-

ance will be compulsory in any business, excluding farming and marine products, in which there are over five employees. This system will include about 1,130,000 additional factory workers, about 70,000 in crews of ships, and about 130,000 workers who engage in other work. This insurance is for laborers. In addition, a system termed "staff sickness insurance" will be established for salaried men who receive less than 150 yen a month, such as officials of the central and local governments, school instructors and office clerks. This is also compulsory and includes their families, a total of about 5,640,000 people. This is absolutely independent of the old insurance.

For those excluded from the foregoing, a voluntary system called "national sickness insurance" will be started. About 1,110,000 persons are expected to join this system.

A vast sum of money to realize these plans will be required of the government.

Rare Medical Books

In an ancient monarchy in the northeastern part of this country there lived a well known physician called Ono Ryuan who practiced Chinese medicine as a family physician of the monarch about 150 years ago. He was noted for his collection of medical books, but since his death they had been missing. This summer his library, called "Kohosen," consisting of more than 1,200 volumes of rare old books on medicine, was by chance discovered at a rich farmer's house in the village where he lived. Professor Muraoka of the Northeastern Medical University judged that they were authentic. This library contains medical books published 500 years ago in China. There are ten volumes devoted to indigenous medicinal plants with a minute explanation of their use. The medical university bought them all.

Personals

Prof. Haruo Hayashi has recently retired as director of the medical department of the Tokyo Imperial University. It is reported that he is going to be elected president of the university in the autumn, when the president's term expires.

On the occasion of celebrating his seventieth birthday recently, Dr. Y. Tashiro, the noted surgical orthopedist and honorary professor of Tokyo Imperial University, received a commemorative offering, and there were about 300 present.

Dr. K. Miyairi, ex-professor of the Imperial University and renowned parasitologist, has donated 3,500 yen as a scholarship fund to the Japan Parasitology Society for a prize for the best paper read in its annual meeting.

Dr. N. Hayashi, who recently retired from his post in the Nagoya Medical University, has established a research institute for the study of tsutsugamushi disease, to which he has devoted his life. His laboratory will give preventive injections free of charge.

Marriages

JOSEPH W. HOLTEY, Ossian, Iowa, to Miss Antoinette C. Hamman of Fond du Lac, Wis., August 21.

CARL ANTON PLATOU, Valley City, N. D., to Miss Inga Rocksvold of Litchfield, in July.

LAWRENCE H. GILMAN, Indianapolis, to Miss Ruth Johnson in New York, August 23.

CHARLES H. COUGHLAN, Iowa City, to Miss Grace Ettinger of Iowa City, August 5.

DAVID G. MILLER to Miss Pearl Claire Dyer, both of Los Angeles, August 27.

ARNOLD L. LIEBERMAN to Miss Hilda Kahan, both of Gary, Ind., August 27.

WILLIS H. MCKEAN, Kansas City, to Miss Virginia Shelton, August 12.

Deaths

Jeremiah Joseph Corbett ☉ Boston Harvard University Medical School, Boston, 1906 member of the American Academy of Ophthalmology and Oto-Laryngology the New England Ophthalmological Society and the New England Otological and Laryngological Society, fellow of the American College of Surgeons, on the staffs of the Boston City Hospital the Malden (Mass.) Hospital and the Whidden Memorial Hospital, Everett, Mass., aged 55 died, August 24, in Santa Fe, N. M.

Earl Willis Kobler, New York, Columbia University College of Physicians and Surgeons, New York, 1906, member of the Medical Society of the State of New York, at one time instructor in laryngology and otology at his alma mater formerly on the staffs of the Manhattan Eye Ear and Throat Hospital and the Vanderbilt Clinic assistant director of the bureau of hygiene, New York City Department of Health, aged 50, died, August 10

George William Warren, New York Johns Hopkins University School of Medicine, Baltimore, 1901, member of the American Association of Genito-Urinary Surgeons and the American Urological Association fellow of the American College of Surgeons, on the staff of the Lutheran Hospital, aged 57, died, August 24, at Ridgefield, Conn., of heart disease

Ralph Alexander Stewart, Lynbrook N. Y., New York Homeopathic Medical College and Hospital, 1900 clinical professor of surgery at his alma mater fellow of the American College of Surgeons, served during the World War, for many years on the staffs of the Broad Street and Community hospitals, New York, aged 64, died August 22

Robert Holmes Greene ☉ New York, Harvard University Medical School, Boston 1886 member of the American Association of Genito-Urinary Surgeons and the American Urological Association fellow of the American College of Surgeons on the staff of the City Hospital, aged 72, died, August 28, of pneumonia

Harvey Mayor Becker, Sunbury Pa. University of Pennsylvania School of Medicine Philadelphia 1898 member of the Medical Society of the State of Pennsylvania and the American Academy of Ophthalmology and Oto-Laryngology medical superintendent of the Mary M. Packer Hospital, aged 60, died, August 28

John Pearl Gifford ☉ Randolph, Vt., Dartmouth Medical School Hanover, N. H., 1897, fellow of the American College of Surgeons, preceptor to the University of Vermont College of Medicine, Burlington on the staff of the Randolph Sanatorium, aged 61, died August 30, in the Deaconess Hospital, Boston

Clarence Eugene Sellers, McCullough Ala. University of Alabama Medical Department Mobile 1904 member of the Medical Association of the State of Alabama aged 54 died August 17 in the Atmore (Ala.) General Hospital of a cerebral hemorrhage, as the result of an automobile accident

Josiah Graves Furnish, Covington Ky., Medical College of Ohio Cincinnati, 1877 member of the Kentucky State Medical Association formerly member of the state senate and of the board of health on the staff of St. Elizabeth's Hospital, aged 80, died September 8, at his home in Erlanger, of pneumonia

Ella Blaylock Atherton Nashua N. H. Queen's University Faculty of Medicine, Kingston Ont. Canada 1887, member of the New Hampshire Medical Society fellow of the American College of Surgeons on the staffs of St. Joseph's and Nashua Memorial hospitals aged 73 died September 4

Maximilian Adolph Schurter ☉ Long Beach Calif. Long Island College Hospital Brooklyn 1912 member of the American Academy of Ophthalmology and Oto-Laryngology on the staff of the Seaside Hospital aged 51 died August 22 of coronary sclerosis and pulmonary edema

John G. Keller ☉ Toledo Ohio Toledo Medical College 1900 member of the American Urological Association fellow of the American College of Surgeons on the staffs of the Toledo and St. Vincent's hospitals aged 61 died, August 4 of myocarditis and bronchial asthma

George B. Hamilton, Olney Texas Fort Worth School of Medicine Medical Department of Fort Worth University 1908 member of the State Medical Association of Texas physician and owner of the Hamilton Hospital aged 54 died July 19 in a hospital at Galveston

John Preston Kennedy, Greenwood Miss. Jenner Medical College Chicago 1917 member of the Mississippi State Medi-

cal Association, served during the World War, aged 40, died August 6 in the Mississippi Baptist Hospital, Jackson, of mercurial poisoning

James Addison Daniels, Carthage, Texas University of Tennessee Medical Department Nashville 1893, member of the State Medical Association of Texas, formerly mayor of Carthage, aged 65, died September 4 in a sanatorium at Shreveport, La.

Albert Martin Bleile, Columbus, Ohio, Starling Medical College Columbus 1876, member of the Ohio State Medical Association emeritus professor of physiology Ohio State University College of Medicine, aged 77, died, August 16 of heart disease

John Charles Gunn ☉ Belleville, Ill. Washington University School of Medicine St. Louis 1900 served during the World War on the staff of St. Vincent's Hospital, and Home for the Aged aged 57, died suddenly, September 4 of heart disease

John Alexander Train, Chicago College of Physicians and Surgeons Chicago, 1891, member of the Illinois State Medical Society, aged 64 on the staff of St. Mary of Nazareth Hospital where he died, August 1, of cerebral hemorrhage

Archer Ward Jagger ☉ Flushing N. Y. University of the City of New York Medical Department 1893 fellow of the American College of Surgeons, for many years on the staff of the Flushing Hospital, aged 67, died August 29

George W. Green ☉ Dowagiac Mich., University of Michigan Ann Arbor 1905 fellow of the American College of Surgeons aged 62 on the staff of the Lee Memorial Hospital, where he died August 21 of gastric hemorrhage

Clifford Charles Kennedy, Norwood Ohio, Ohio-Miami Medical College of the University of Cincinnati 1910, served during the World War aged 48, died August 15, in the Christ Hospital Cincinnati, of myocarditis

Joseph White Williams, Paterson N. J. College of Physicians and Surgeons Medical Department of Columbia College New York, 1890, served during the World War, aged 67, died August 19, of heart disease

Harry S. Benham, Honeoye Falls N. Y., University of Buffalo School of Medicine, 1890, member of the Medical Society of the State of New York, aged 69, died, August 21, of cerebral hemorrhage and arteriosclerosis

William C. Anderson, Forest Miss., Memphis (Tenn.) Hospital Medical College, 1900 member of the Mississippi State Medical Association county health officer, aged 59, died August 23, of carcinoma of the lung

William Samuel Briggs, Dinwiddie, Va., Kentucky School of Medicine Louisville 1890, member of the Medical Society of Virginia aged 76, died August 6 in Petersburg (Va.) Hospital, of chronic interstitial nephritis

Wilber Emmett Fowler, Brookville, Kan. College of Physicians and Surgeons of Chicago 1884 member of the Kansas Medical Society aged 77 died, May 18 in St. John's Hospital, Salina of diabetes mellitus

Walter H. Fuchs ☉ St. Louis Beaumont Hospital Medical College St. Louis 1891 formerly member of the city board of health aged 64, died August 16, in St. Luke's Hospital, of bronchopneumonia and peptic ulcer

Van Buren Knott, Victoria B. C. Canada Columbian University Medical Department Washington, D. C. 1893, veteran of the Spanish-American and World wars aged 61, died in July, of Buerger's disease

Mark Davis Lessard ☉ South San Francisco Calif. University of California Medical School 1923 aged 52 medical superintendent of the South San Francisco Hospital, where he died August 1, of heart disease

Edwin Brown Anderson, Chattanooga Tenn., Vanderbilt University School of Medicine Nashville 1896 member of the Tennessee State Medical Association aged 60 died August 28 of heart disease

Heydon Starrett, Forest Hills N. Y. College of Physicians and Surgeons Medical Department of Columbia College, 1880 aged 74 died August 16 of carcinoma of the rectum prostate and bladder

John Davis Gambill, Baltimore Johns Hopkins University School of Medicine Baltimore 1932 intern at the Johns Hopkins Hospital aged 26 was instantly killed August 8, in an automobile accident.

Edmund Christie, Chicago McGill University Faculty of Medicine Montreal Que. Canada 1882 aged 72 died Sep-

tember 8, in the Hospital of St. Anthony de Padua, of injuries received in a fall

Joseph Calvin Fahnestock, Piqua, Ohio, New York Homeopathic Medical College and Hospital, 1882, aged 75, died, August 19, in the Good Samaritan Hospital, Dayton, of heart disease

Maurice Benjamin Spector * Wrightsville Pa Temple University School of Medicine Philadelphia 1926, aged 34 died, July 27, in the York (Pa) Hospital of cerebral hemorrhage

Rodney Adren Wright * De Kalb, Ill., Hahnemann Medical College and Hospital Chicago 1913 on the staff of St. Mary's Hospital, aged 47, died, August 24 in Prescott Ariz

Griffith Arthur Thomas, Detroit, Detroit College of Medicine 1900 for many years physician to the police department aged 61, died August 27, in the Harper Hospital, of hemiplegia

Edward Judson Burch, Carthage Mo Missouri Medical College, St. Louis 1887 member of the Missouri State Medical Association aged 66 died August 3 of cerebral embolism

Theodore Shay Smith, Elton La Kentucky School of Medicine, Louisville, 1893 formerly parish coroner aged 74, died August 21, in St. Patrick's Sanitarium Lake Charles

William Buermann * Newark, N. J., Columbia University College of Physicians and Surgeons, New York 1896 aged 58, died, August 7, at his summer home in Avonstong

John Elmer Meisenhelder * Hanover, Pa Johns Hopkins University School of Medicine Baltimore, 1902, on the staff of the Hanover General Hospital, aged 56 died, July 13

T. G. Brown, Gainesville Va (licensed Virginia by exemption in 1885) member of the Medical Society of Virginia, aged 76, died, August 3, of arteriosclerosis and hemiplegia

James W. Temple, Rolla Mo, St. Louis Medical College 1876, Civil War veteran formerly mayor of Eldon and member of the board of education, aged 84, died, August 14

Fred Stansbury, Becklev, W. Va Loyola University School of Medicine, Chicago, 1919, aged 43 died August 10, in a local hospital, of hernia and a gallbladder infection

William F. Walker, Elkview, W. Va., Kentucky School of Medicine Louisville, 1907 aged 57, died July 26, in a hospital at Charleston, of empyema of the gallbladder

John Gael Hathaway, New Bedford Mass., College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1895, aged 61 died, August 20

Frederick Hastings Shanks, San Francisco Jefferson Medical College of Philadelphia 1891 member of the California Medical Association aged 64, died, July 28

Thompson B. Wright, Pasadena, Calif Columbus (Ohio) Medical College, 1886, veteran of the Spanish-American War, aged 69, died, August 22, of cerebral hemorrhage

Theodore Baker * Pittsburgh Johns Hopkins University School of Medicine, Baltimore 1904 member of the American Urological Association, aged 54, died August 11

Arthur B. Adams, Omaha John A. Creighton Medical College, Omaha, 1905, aged 55, died, August 16 in the Immanuel Hospital, of hypertensive heart disease

Dennis R. Dupuis, Santa Monica Calif., Kentucky School of Medicine Louisville, 1902, aged 64 died July 21, of hypertension myocarditis and arteriosclerosis

Charles P. Monroe, De Ruyter N. Y., College of Physicians and Surgeons, Baltimore, 1892 aged 66 died May 11, of cerebral embolism and coronary disease

Donald George Sinclair McKay, Madawaska, Ont., Canada, University of Toronto Faculty of Medicine, 1910, aged 47 was accidentally drowned, August 3

Glenn Wood, Pasadena Calif College of Physicians and Surgeons of Chicago School of Medicine of the University of Illinois, 1899, aged 61 died, July 22

Jacob L. Bowers, Little Mountain S. C., University of Maryland School of Medicine Baltimore 1888, aged 72 died August 29 of cerebral hemorrhage

Edward Gabriel Gillis, Kensington, P. E. I. McGill University Faculty of Medicine Montreal, Que 1899 aged 56 died August 7 of heart disease

Charles Barnes Smith Unionville Manit. Canada University of Alberta Faculty of Medicine Edmonton 1928 aged 34 died May 19 of meningitis

Duke Keith, Los Angeles, University of Southern California College of Medicine, Los Angeles, 1904, aged 51, died, July 14 of chronic myocarditis

Gabriel Wolfgang Teschner, New York, College of Physicians and Surgeons, Medical Department of Columbia College, 1880, died July 14

John B. Roth, Portland, Ore University of Oregon Medical School, Portland 1899, aged 68 died, July 22, of cardio-renal disease and cirrhosis

Walter H. Cowgill, Philadelphia, Hahnemann Medical College of Philadelphia 1882, aged 73 died, September 1, of heart disease and uremia

William Gustav Freiday, Fort Lauderdale Fla., Jefferson Medical College of Philadelphia, 1889, aged 73, died, June 7 of cerebral thrombosis

Paschall Nathaniel Bowman, Sterling, Ill Barnes Medical College, St. Louis 1899 aged 65, died, July 22 of nephritis myocarditis and arteriosclerosis

George Augustus Wood, San Francisco, Northwestern University Medical School, Chicago, 1905, aged 53, died August 18, of heart disease

James M. Jenkins, Crenshaw, Miss., Memphis (Tenn) Hospital Medical College, 1904, aged 59, died, May 21 of cerebral hemorrhage

Herman J. Whittier, Kansas City Mo., Eclectic Medical Institute Cincinnati, 1883 aged 77, died August 15, of hypostatic pneumonia

Willard A. Curtis, Colorado Springs Colo Chicago Medical College, 1882 aged 80 died, August 19, in the Bethel General Hospital

Albert C. Knapp, Cortland N. Y., Syracuse University College of Medicine, 1896, aged 62, died, August 13, of malignant leukopenia

Julius Caesar Wise, Kansas City, Mo Kansas City Homeopathic Medical College 1896, aged 89, died, July 28, of arteriosclerosis

Herbert Carl Martin, Hamilton, Ont., Canada University of Toronto Faculty of Medicine, 1915, aged 44, died, May 8, of myocarditis

Herbert Porter Stivers, Buechel Ky., Hospital College of Medicine, Louisville, 1896, aged 62 died, August 21, of heart disease

Eugene H. Winkler, De Witt Ark Memphis (Tenn) Hospital Medical College 1891, aged 66 died in August, at Little Rock

Barton H. Moss, Willow Okla (registered Oklahoma, by the state board of health, under the Act of 1908), aged 88, died July 20

Alexander Trautman, New York University of the City of New York Medical Department 1879, aged 83, died, August 19

Charles C. Gidney, Plainview Texas, Louisville (Ky) Medical College 1892, bank president aged 66, died August 24

Emory Llewellyn Dial, Cleveland Western Reserve University Medical Department, Cleveland, 1898 aged 66, died August 25

Francis Asbury Bryant, Herrick, S. D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, aged 81, died August 14

Arthur Jackson, Lockwood Mo Ensworth Medical College St. Joseph, 1908, aged 48, died July 26, in Marshfield of uremia

Alphons M. Kersten, Los Angeles Detroit Medical College 1885, aged 85, died, August 13, of myocarditis and arteriosclerosis

John F. McGrath, Central Falls R. I. Illinois Medical College Chicago 1902 aged 54, died May 30, of angina pectoris

William H. White, Amo Ind., Medical College of Indiana Indianapolis 1882 aged 77, died, August 25, of cardio-renal disease

Harbin Jacob Stevens, Medill, Mo Eclectic Medical Institute Cincinnati 1878 aged 85, died May 21, of senility

Max Salomon, San Francisco Cooper Medical College, San Francisco 1886 aged 70 died July 9, of carcinoma

S. M. Johnson, Wrightsville Ga., Atlanta Medical College 1893 aged 74 died July 1, of heart disease

Bureau of Investigation

THE FEDERAL TRADE COMMISSION

More Nostrum Exploiters Brought to Time

The work of the Federal Trade Commission in helping to protect the public against misrepresentation or fraud in the medical field has been called attention to in this department of THE JOURNAL at various times. As has been previously pointed out, the Federal Trade Commission has powers in this field that are not possessed by the Food and Drug Administration that enforces the Food and Drugs Act. That Act as is well known, gives no control of fraudulent advertising of medicinal products unless such advertising appears on or in the trade package. The Federal Trade Commission has been given broad powers to investigate and take action in cases that involve or appear to involve unfair trade practices. False or fraudulent advertising is of course unfair competition. Where such unfair practices are proved the Commission may require the concern involved to sign a stipulation to the effect that the objectionable methods will be given up. In other cases the Commission may issue what is known as a 'Cease and Desist Order' in which the individual or company involved is ordered to cease and desist from practices that have been declared objectionable.

Recently (July 17 1933) the Commission reported that it had available for distribution statements of facts in a series of stipulation proceedings involving misleading advertising practices. We present here brief abstracts of such stipulations where they involve medical or quasi-medical products. These abstracts are supplemented in some instances by information from the files of the Bureau of Investigation of the American Medical Association.

E E Paddock—This man who operates from Kansas City, Mo., has for some years posed as a specialist in gallbladder disease. He recently signed a stipulation with the Federal Trade Commission to cease and desist against continuing false and misleading advertising. He specifically stipulated that he would cease representing in his advertisements that his treatment was an adequate one for gallstones, gallbladder or liver disorders that it would strengthen or stimulate the organs so

that they would take care of gallstones, that it would induce a flow of healthy bile that it would combat infection in the gallbladder that his prescriptions embodied the combined knowledge of the medical profession—and other claims similarly preposterous. Paddock's activities have been

CALL
STONES and GALL BLADDER Irritations
Before risking operations send for my free booklet explaining simple home treatment for Irritations of Gall Bladder and Gall Ducts as associated with Gallstones
Dr E E Paddock Desk 18 Kans. City Mo
(30 Yrs Experience in Chronic Diseases)

briefly referred to in THE JOURNAL and *Hypocrite*. It was there pointed out that in addition to a gallstone cure he also seemed to have some connection with a concern calling itself the Lyle Chemical Company which put out a 'special prescription' for women called *Natura*. Those who answered his gallstone cure advertisement but failed to bite were later circularized by the Lyle Chemical Company. Paddock was born in 1867 holds a diploma from the Kansas City Medical College 1895 and a Missouri license of the same year.

Sargon and Sargon Pills—Sargon is a typical alcoholic patent medicine put out by G F Willis, Inc. of Atlanta, Ga. Willis was the former exploiter of Tanla, a similar alcoholic nostrum. Sargon was declared misbranded under the Federal Food and Drugs Act because of false and fraudulent claims made for it. An abstract of the Government's case against this nostrum appeared in this department of THE JOURNAL Jan. 5, 1931. Sargon Sulf Mass Pills seem to be a complementary treatment that goes with Sargon and are apparently the sen-

tially phenolphthalein. G F Willis, Inc. has recently filed a stipulation with the Federal Trade Commission agreeing to cease publishing false or misleading statements and specifically to cease claiming: (1) That Sargon is based upon a new or revolutionary formula; (2) that it accomplishes its results by new and amazing methods; (3) that it is the result of world-wide research; (4) that signed statements approving Sargon pour in from physicians and various other false and misleading claims. The concern also stipulated that it would cease misstating the official professional or educational standing of persons giving testimonials would cease publishing testimonials that had been altered so as to change their meaning, and would also cease using testimonials that had been paid for unless the fact that they had been paid for was given publicly.

Natural Body Brace Company—This Salina, Kan. concern sells a body brace for which false and misleading claims have been made. It has recently filed a stipulation with the Commission agreeing to cease and desist from publishing false statements and specifically agrees to cease representing that the wearing of this body brace constitutes a competent treatment for such conditions as female weakness, constipation, unnatural thinness, colitis, kidney, bladder or liver trouble, heart ailments, lung trouble and various other conditions. It also agreed to cease claiming that by wearing its brace one could become 100 per cent efficient and that the braces were made to individual measure of the purchaser if they were not and similar unsupported claims.

Costs You Nothing to Try THE NATURAL BODY BRACE
IF NOT SATISFACTORY AFTER 30-DAY TRIAL
Overcomes Female Weakness—Makes Walking and Work Easy
Develops erect, graceful figure; lungs, chest, bust. Replaces and supports misplaced organs. Corrects stooping shoulders. Relieves backache, curvatures, nervousness, constipation after effects of flu. Thousands write the following:
"ENDS 10 YEARS OF SUFFERING"
"Before wearing your brace I could scarcely climb the stairs. I had suffered ten years with wind, trouble, nervousness, headache, and constipation. Tried almost everything or nothing at all. I wish I could let every suffering woman know what The Natural Body Brace has done for me."
Shipp's Pharmacy, 111 N. J. St., Kansas City, Mo.
Made to your individual measure. Comfortable, easy to wear. Over 300,000 users.
Mail Coupon for free Illustrated Booklet, "Health, Strength and Perfect Figure," and liberal trial proposition. (11)
THE NATURAL BODY BRACE CO.
Howard C. Cook, Pres.
306 Cash Building, Salina, Kan.

Harris H Luntz—This person from Brooklyn, N. Y., under the trade name Beauty Research Corporation, sold a product called 'Formula Q' as an alleged treatment for wrinkles, sagging skin, age lines, etc. Harris H Luntz has been dealt with at some length in this department of THE JOURNAL in connection with the purchase of testimonials for the product. Flaxolyn, which Luntz purported to have discovered, Formula Q has been sold under the claim that by its use a woman could get new beauty overnight, would be made to look ten years younger, would have every blemish cleared away. It was said to be a famous old secret lost for years, but rediscovered. The same and similar ridiculous claims the Federal Trade Commission most conservatively declared to be incorrect, exaggerated and misleading. In a stipulation filed with the Commission the Luntz concern admits having made such misrepresentations but declares that it has discontinued the advertising of Formula Q and does not intend to resume such advertising and that the sale of the stuff will be limited to the filling of unsolicited orders.

Gaduette Company—This concern which hails from Battle Creek, Mich., is said to be a trade name used by Mary F. Poyer and Floyd R. Perkins. The Bureau of Investigation has no record of Mary F. Poyer but there is one Floyd R. Perkins listed in the files who some years ago was president of a 'deanness cure' concern known as the L. C. Grains Company, which took over the business of a notorious quack, one Guy Clifford Powell (deceased). This same Floyd R. Perkins was at the same time listed as president of an advertising agency, the Charles H. Fuller Company, which was reported to have purchased Guy Clifford Powell's concern when that quack died and to have moved it from Peoria, Ill., to Chicago where the name was changed to the L. C. Grain Company. The Gaduette Company has been selling a product called Gaduette, claiming that by their use one would be sure of weight and vitality to

a ripe old age Gaduettes were said to be a flesh and strength builder that would give you "vital energy" and make you look and feel like a million dollars." Now Mary E. Boyer and Floyd R. Perkins have signed a stipulation with the Federal Trade Commission admitting the exaggerated and misleading character of the claims made for Gaduettes and agreeing to cease and desist from circulating such false or misleading statements and specifically agreeing to cease claiming that Gaduettes will cause an increase in weight, strength, vitality, energy and health and that it will show an increase in weight and vitality and that it is both a flesh and a strength builder and that it is a competent treatment for masculine or feminine weaknesses as well as for rheumatism, neuralgia, bronchitis, goiter and gout.

Dryorb Company—This was a trade name used by one S. S. Russell of St. Louis, Mo., who has been selling a preparation for the self-treatment of hemorrhoids. Some of the claims made by Russell have been that the oldest cases of piles are now as easy to end as a cold. He has declared that medical science found "Dryorb" to be a new and better way to end piles than the use of surgery. He had also sold the stuff under the claim that "cases of long standing, no matter how stubborn or weakening, yield to Dryorb's constant absorbing action." All of these claims and some others Russell has stipulated he will cease making.

Health Appliance Company—This Cleveland, Ohio, concern had been advertising an appliance and an astringent that was said to lift drooping chins "by shrinking released muscles and reducing flesh cells." The claim was made that by using



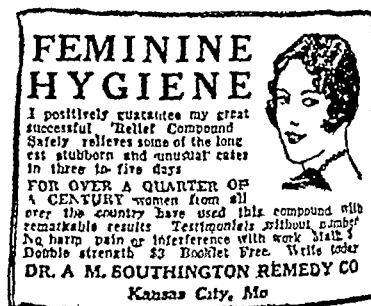
the device and the astringent one could "quickly bring back the fascination of that youthful chin-line of girlhood." The concern has stipulated with the Commission to cease publishing or circulating false or misleading statements and specifically to cease claiming that the astringent lotion aids or causes a shrinkage of muscles in the chin.

Conley Ointment Corporation—This Muncie, Ind., concern was incorporated under Indiana laws in 1928, with a retired merchant as president, a man connected with a local wood-bending company as vice-president and another man connected with a metal products concern as secretary and treasurer—experience in these fields presumably qualifying them to put on the market a medicine for the self-treatment of self-diagnosed human ailments. Their product was an alleged treatment for eczema and psoriasis which was sold under the claim that it was a quick, positive and permanent relief for both eczema and psoriasis. The company filed a stipulation with the Federal Trade Commission declaring that it had definitely discontinued the advertisements of its commodity and did not intend to resume such advertising in the future.

Clason Viscose Company—This Chicago concern according to the Federal Trade Commission, is the trade name of a common law trust operated by C. W. Cook, trustee. Presumably this is the Wilson Cook whose name has appeared in extensive advertising for the Viscose Company, which has claimed to cure varicose veins. The scheme, as it first originated, was dealt with in this department of THE JOURNAL, July 16, 1927. Now C. W. Cook has signed a stipulation with the Commission agreeing to cease and desist from continuing to make false and misleading statements regarding the treatment and he specifically agrees to cease claiming that the Viscose method will invariably stop or heal a large number of conditions

that in the past it has been alleged to stop or heal. He also has agreed to cease claiming that his treatment is uniformly successful and that there is nothing in the country so scientific and effective and that the healing of any and every varicose vein can be absolutely guaranteed, and various other specifically exaggerated and misleading claims.

The Southington Remedy Company—This concern which was a trade name for one A. C. Haysler, Jr., of Kansas City, Mo., has been engaged in the sale of an abortifacient "patent medicine" under the claim that it "safely relieves some of the longest, stubborn and unusual cases in three to five days." The Federal Trade Commission in quoting various claims stated that these claims implied that the Southington Remedy Company's nostrum would produce abortion and that it was a competent treatment for suppressed menstruation. Haysler has signed a stipulation agreeing to cease claiming either by inference or directly, that his preparation would cause abortion or that it was a competent treatment for the relief of suppressed menstruation or that stubborn and abnormal cases could be relieved by the use of it or that the use of the treatment would never cause disappointment and would relieve a woman from worry.

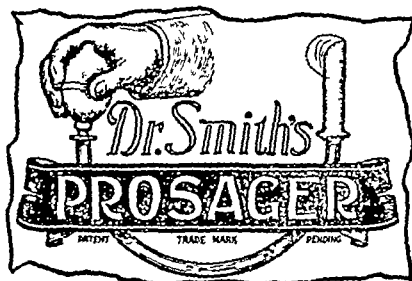


Lecithin Company—This was the trade name of one Raymond Doyle, of Long Island City, N. Y., who was engaged in selling "Lecithin Tablets" as an alleged aphrodisiac. As a sample of the claims under which the thing was sold the following will suffice:

Men who have read the *Police Gazette* for years will be glad to learn that Lecithin is back again to help bring that show of pep and vigor which is the mark of strong healthy man.

Doyle has now filed a stipulation with the Commission stating that he has definitely discontinued the advertising of his tablets and does not intend to resume such advertising, and that in the future he will limit the sale of his tablets to the filling of unsolicited orders.

MidWest Products Company—This concern was a trade name used by W. D. Smith and Thomas A. Baden of Kalamazoo, Mich. From advertising matter in the files of the Bureau of Investigation it appears that there was also one



B. A. Smith connected with the concern. The company was engaged in selling a device called the "Prosager" as an alleged treatment for prostatic trouble. The device itself consisted of a rubber cylinder that was to be inserted into the rectum and to which attached by a tube, there was a rubber bulb. When the bulb was pressed air was forced into the rectal tube which would produce pressure through the rectum onto the prostate. The concern has filed a stipulation with the Commission agreeing to cease claiming, either by inference or otherwise, that the various symptoms that they have listed in their advertising literature are the result of derangements of the prostate gland and to cease, also, claiming that 65 per cent or any other per

centage of men past forty years of age have prostatic lesions, and finally, that they cease claiming that every physician concedes that massage is the only real treatment for prostatic trouble

Ulticur Company, Inc—This Chicago outfit was earlier known as the 'Ulcicur Company,' and sold a product that was alleged to be a cure for stomach ulcers. This was declared misbranded under the National Food and Drugs Act because of fraudulent therapeutic claims. The name 'Ulcicur' in itself, being obviously fraudulent, the company changed it to 'Ulticur.' Now, under the newer name, having removed their fraudulent claims from the trade package (where they would come under the purview of the National Food and Drugs Act) to the newspapers, where they are apparently under no control, the Federal Trade Commission proceeded against them, with the result that the Ulticur Company, Inc. filed a stipulation agreeing to cease and desist from publishing false or misleading statements in general and specifically agreeing to cease representing (1) That Ulticur is a competent treatment for stomach or duodenal ulcers, and (2) that it is a cure for ulcers.

Johnston's Golden S O S Powder—This preparation was put out by the Johnston Chemical Company of Fort Bragg, Calif. and was sold under the claim that it was a competent treatment and an effective remedy for stomach ulcers, stomach pains and similar ailments. The company has filed a stipulation with the Commission declaring that it has definitely discontinued the advertising of 'Johnston's Golden S O S Powder' in interstate commerce and that the sale of the commodity beyond the boundaries of the State of California will be limited to the filling of unsolicited orders.

Correspondence

DIABETES AND BLOOD TRANSFUSION

To the Editor—I have recently had several striking experiences in doing Aschheim-Zondek tests on rabbits, and in doing one blood transfusion with a diabetic donor. So far as I know there are no published reports of similar experiences and my reason for recording them is to sound a warning to those doing blood transfusions, that they may avoid similar and possibly fatal accidents.

About one year ago I had occasion to perform an Aschheim test for suspected pregnancy. I used the technic that I had previously used in many instances, by injecting about 8 cc of freshly voided urine into the marginal vein in the ear of a rabbit. On this occasion after a little more than half of the urine had been injected the rabbit was taken with a convulsive seizure and was dead immediately. I secured a second specimen of urine this time doing a chemical analysis and found that the patient was moderately diabetic as shown by Benedict's solution test. I repeated the Aschheim test with this urine and had the same experience with this rabbit.

A short time after this I had occasion to do a blood transfusion on a 3 months old baby. The father's blood was typed and cross agglutinated and showed no incompatibility. He was known however to be diabetic. He was under treatment and his urine was free of sugar and ketone bodies. After about 150 cc of the blood had been given to the baby intravenously the child went into a sudden collapse and was pulseless, breathless and livid. After strenuous efforts at resuscitation the child revived but passed a rather stormy three or four days subsequently. The examination of the urine and blood showed nothing to indicate that the reaction had been due to blood incompatibility. My experiences with the rabbits previously made me feel that there was a relationship between the accidents to the rabbits and the symptoms shown by the baby.

Just today I had a similar experience in doing an Aschheim test on a patient who is mildly diabetic as shown by a positive

Benedict test and also positive acetone. I have had considerable experience with the Aschheim test over a period of years and at no time have I had any reactions in the rabbits except in these cases of diabetes.

Unless there have been previous reports of a similar nature which are unknown to me, or until further work can be done along this line, I believe it would be wise for those doing blood transfusions to eliminate known diabetic patients as donors, because I believe it is possible that some of the untoward symptoms and possibly deaths following transfusion in the past may have been due to the use of diabetic donors.

E C BAUMGARTEN, M.D., Detroit

SALE OF PHYSICIANS' SAMPLES

To the Editor—May I call your attention to a possible new 'racket', certainly it was brand new for me. A man came into my office very well dressed, and wanted to buy any 'physicians' samples' I had on hand. I told him I had none on hand. He then wanted to know if he might call at some future time for any samples I might have. I didn't invite him to do so, but I did inquire as to what possible use he might have for them and he said that there was a sale for them.

Pharmaceutic manufacturers would hardly care to have the samples which they have left in the hands of physicians disposed of in this way. There must be some angle to all this which is not apparent on the surface. If this is a practice carried out on a wide scale in numerous cities, I can see that it might definitely affect manufacturers.

WALTER C ALLEN, M.D., Rochester, N. Y.

"ACUTE EPIDEMIC POLIOMYELITIS COMPLICATING PREGNANCY"

To the Editor—Drs. M. Bernard Brahdly and Maurice Lenarsky described in THE JOURNAL, July 15, three new observations of acute epidemic poliomyelitis complicating pregnancy. Justly, it seems, they assume that many of these cases remain unreported though undeniably a larger number of reported cases would greatly aid the obstetrician in solving various problems presented by a pregnant woman suddenly exhibiting the symptoms of poliomyelitis. This valid argument induces me to place another case on record.

Mrs. E. B., when seen, Jan. 5, 1925, was 18 years old and had been married six months. She last menstruated at the expected time Nov. 16, 1924. A diagnosis of normal intra-uterine pregnancy was made. The physical condition was normal in every respect. The time of expected delivery was August 23. Pregnancy progressed normally.

June 30 general malaise developed and the patient's temperature was 100. Next day the temperature varied between 99.5 and 100. She complained of aching over her entire body. All the muscles were tender. The question of poliomyelitis was considered but there were no signs of paralysis. The following day (July 2) the muscle tenderness was most marked in the right leg. Late in the afternoon the patient was unable to move it. The diagnosis of acute poliomyelitis was confirmed by a neurologist.

Gradually all the muscles of the right lower extremity became involved as well as some muscles of the right arm and of the face. Further progress was typical. The paralytic symptoms gradually receded, only a few muscles of the right leg remained paralyzed.

Feeling again entirely well the patient went into labor approximately the expected time August 24. Labor was fairly easy and entirely normal. The patient was delivered by means of perineal forceps of a male infant weighing 3265 Gm. per-

fectly normal. The puerperium was disturbed by a perirectal abscess.

At present (September 1) the patient is in the third month of her second pregnancy. Outside of a slight limp she exhibits no symptoms of the disease. The child, now 8 years old is physically and mentally normal.

HUGO EHRLHART, M.D., St. Louis

THE CLINICAL MANIFESTATIONS OF SILICOSIS

To the Editor—On reading "The Clinical Manifestations of Silicosis" by Dr. R. R. Sayers and the discussion in *THE JOURNAL* August 19, it occurred to me that although the author stressed shortness of breath as the cardinal symptom and decreased chest expansion as the cardinal sign of the condition no mention was made of the obvious importance of vital capacity readings. It is well known that measurements of chest expansion are unreliable. With the spirometer the vital capacity of these patients could be quickly and reliably checked.

KENNETH A. OWEN, M.D., Charleston, W. Va.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

CONGENITAL SYPHILIS WITHOUT OBVIOUS SIGNS

To the Editor—A woman aged 32 married but separated from her husband with a clinical picture of syphilitic aortitis confirmed by a four plus Wassermann and a two plus Kahn reaction. Dec. 7, 1932, was given strong mercury rubs one-half drachm (2 Gm.) nightly for two weeks when they were discontinued because of diarrhea which cleared after one week without the rubs. At this time bismuth sodium tartrate was given twice weekly for only six injections (the first one January 16). This was discontinued because of apparent bismuth or mercurial stomatitis, diarrhea and albumin in the urine which was not present before. The patient went down grade for the next three weeks from 170 pounds (77 kg.) to 135 pounds (61 kg.). By March 9 she was well enough to be out again and a Wassermann test taken then was negative as was the Kahn test. An examination five days later gave the Wassermann reaction as one plus and the Kahn reaction negative. I have started her on the second series of bismuth using iodobismutol and have had no reactions from the first three injections. Her son is 13 years old. He was born with eczema but other than that which cleared in a short time he has been perfectly healthy and is now in the eighth grade and of average status. His Wassermann reaction is four plus and Kahn reaction four plus but there are no signs of congenital syphilis present. The reflexes are normal, there are no Hutchinson teeth, keratitis nor leukoplakia. The sense position is normal and memory is normal. The only sign I can find is that in test sentences he has difficulty in saying "Methodist Episcopal." His father is said to be syphilitic although I have not seen him. The boy's general physical examination is negative. The questions I cannot answer are: 1. What causes the severe reaction with so little medication of the mother and a negative Wassermann reaction if syphilis has been present a minimum of thirteen years? 2. Is the boy syphilitic? If so why are there no signs after thirteen years? 3. What further treatment should the mother have and what treatment should the boy have? This is the only pregnancy the mother has had. She gives no history of a primary or secondary stage. Please omit name and address.

M.D. Ohio

ANSWER—1. The severe mercurial reaction here described in the woman as manifested by diarrhea, stomatitis and albuminuria indicates a marked sensitivity to mercury. An individual sensitivity to any drug, foodstuff or foreign protein is a constitutional factor of any given organism, and the degree of reaction in any specific case can never be predicted. The idiosyncrasy may be individual or familial. The reaction of cats to morphine is a time-honored example of the different reaction which any drug may have on a certain species of animal. As long as there was no reaction from the first three injections of iodobismutol it would be well to continue this drug. The serum reactions cannot be used as a definitive index to the extent or degree of a syphilitic process. This patient has clinical evidence of a syphilitic arteritis of the aorta and deserves the benefit of a complete and thorough course of antisyphilitic treatment no matter what the laboratory test may show.

2. The boy is said to have no signs of congenital syphilis with the exception of difficulty in saying "Methodist Episcopal" and four plus blood Wassermann and Kahn tests. Neurosyphilis

may occur in syphilis hereditaria tarda without other typical signs of congenital syphilis and with slight or no demonstrable signs of nervous system involvement. Tabes dorsalis and dementia paralytica are not common manifestations of congenital syphilis but are known to occur.

A spinal fluid examination would be strongly indicated in this case. If serologic tests on the spinal fluid and colloidal gold reactions are positive strong evidence for neurosyphilis of congenital origin would be obtained. The history in the mother and father also substantiates such a diagnosis. Asymptomatic neurosyphilis is not an infrequent manifestation of congenital syphilis. In a large series of congenital syphilitic children only one third of the number with pathologic cerebrospinal fluid showed demonstrable clinical evidence of neurosyphilis.

3. As has been indicated a thorough and complete course of antisyphilitic treatment with iodobismutol should be given the mother. In the case of the boy, if the spinal fluid is found to be positive an intensive course of antisyphilitic treatment would be imperative.

The treatment for the boy may consist in the use of an arsenical intravenously, intramuscularly or orally. The arsenical may be alternated with a course of compounds of mercury, bismuth or iodine though a definite rest period between arsenical courses is absolutely indicated.

The dosage in children for intravenous neoarsphenamine is 15 mg. per kilogram of body weight for intramuscular sulpharsphenamine the dosage is 20 mg. per kilogram of body weight and the oral dosage of acetarsone for children is an initial dose of 5 mg. per kilogram of body weight daily, increasing to 20 mg. The arsenical courses may be given for periods of from six to nine weeks followed by a rest period of from two to three months. Serologic examinations of the blood and the spinal fluid should be made at the beginning or end of each course and the blood and urine should be carefully controlled. Arsenical reactions demand immediate cessation of treatment. In case of a severe arsenical reaction, iodobismutol might be used in the proper dosage for a child.

PALLIATIVE TREATMENT FOR RECTAL STRICTURE IN AGED

To the Editor—What palliative treatment is indicated for rectal stricture in a woman of 78 unable to undertake the radical treatment? She has hemorrhoids too. Constipation is controlled by mild laxatives. I have used suppositories with little success. Please omit name.

M.D. Ohio

ANSWER—The only palliative treatment for stricture of the rectum in a woman 78 years of age unable to undertake radical treatment would be to obtain a rectal dilator such as a Hegar metal dilator, of exactly the size of the stricture so that this may be used two or three times a week to prevent the stricture from still further contracting down. Liquid petrolatum, a laxative diet and mild laxatives of course may also be used. In the event that the stricture is in such a position that it cannot be maintained in its present position by dilation and the opening is so small that elimination is impossible, a colostomy could be done under local anesthesia.

TREATMENT OF SYPHILIS

To the Editor—A woman patient of mine aged 25 contracted syphilis six years ago. Until 1930 she had received at intervals short courses of arsenicals intravenously. She received no treatment from that time until February 1933 when I saw her at which time she had a 4+ Wassermann reaction. She had a similar reaction of the spinal fluid, a colloidal gold curve of no particular significance and an increase in globulin. No cell count was made. The patient was given eight injections of bismuth salicylate intramuscularly at weekly intervals followed by eight intravenous injections of 0.6 Gm. of neoarsphenamine at the same time interval. Without any rest period she was started on another series of bismuth injections. I have given her four injections of her second bismuth series and find a 3+ albumin in the urine. Microscopic examination is negative. The patient has also been taking potassium iodide regularly. In view of the urinary finding what type of treatment should I employ? Her blood Wassermann reaction now being reported as 3+? When should treatment be employed toward the syphilis of the nervous system? Do bismuth compounds have an effect on the kidney? Please omit name.

M.D. New York

ANSWER—In view of the albuminuria, it would appear to be safer to discontinue all treatment for a time. If after a rest period of several weeks the albumin has disappeared, treatment could be commenced cautiously, the urine being watched at frequent intervals. There is no reason why treatment for the neurosyphilis should not be given at once. A course of trypanarsamide or intravenous acetarsone may be administered provided the eye examination is satisfactory. Even malarial or fever therapy might be considered. Bismuth compounds not infrequently cause albuminuria, more especially in cases in

which stomatitis develops. Bismuth nephritis is well known and was often reported by the early French workers, who gave large doses of bismuth salts and employed them by the intravenous route. Schamberg and Wright state that although experimentally bismuth appears to be exceedingly injurious to the kidney, in actual practice it has not proved to be so but has proved less harmful than mercury.

DIAGNOSIS OF TYPHOID

To the Editor—I have been attending a woman aged 38 who was taken ill August 6 with nausea and vomiting. She vomited every day until August 11 when I was called for the first time to see her. I found her apathetic with a fever of 102 and a pulse of 100. Her chest was clear throughout her illness; there was slight generalized abdominal tenderness but no constipation nor diarrhea. The fever continued and for several days varied between 103.5 and 104 F. For one day her pulse was definitely dicrotic. The white cell count was 3550. August 16 a differential count was not done. Her spleen could not be palpated but she is very obese. There was no suggestion of rose spots. A blood culture August 16 showed no growth but a Widal test the same day was strongly positive for B typhosus and negative for paratyphosus A and B and for *Alcaligenes abortus*. Six fecal cultures have been taken and have been negative throughout. The fever continued for two and one-half weeks and descended by lysis. She is now convalescing nicely. The patient lives on a dairy farm on which occurred three and one-half years ago three definite cases of typhoid proved by fecal culture and Widal tests. At that time this woman had three injections of typhoid paratyphosus A and B mixed vaccine as a prophylactic. 1. Is there any reliable method by which the agglutination resulting from preventive inoculation can be differentiated from that of clinical typhoid? 2. If this case were not true typhoid would not the paratyphosus A and B agglutinations be correspondingly positive? 3. Can clinical typhoid be assumed in this case without any demonstration of bacilli in blood, feces or urine? Please omit name. M D New York.

ANSWER—1. After the fever has subsided agglutinins due to inoculation cannot be distinguished from agglutinins due to infection. A more or less gradual rise in the specific typhoid agglutinin titer during the course of the fever would indicate typhoid infection.

2. As the paratyphoid agglutinins are different from the typhoid there is no certainty that both paratyphoid and typhoid agglutinins would all be present three and a half years after the injection of mixed vaccine.

3. The facts and circumstances of the case appear to warrant the conclusion that the patient had a mild attack of typhoid.

APPENDICITIS AND DUODENAL ULCER

To the Editor—A man aged 32 has been getting treatment for duodenal ulcer for the past three years. He has two or three attacks yearly which keep him from his occupation of light labor for about six to eight weeks each time. Roentgen examination shows duodenal ulcer and a subacute appendicitis (thirteen years ago he had several appendiceal attacks). The patient has had teeth but is otherwise normal. Would you advise in view of the repeated failures from dietary procedure, appendectomy alone or appendectomy together with an attempt at cauterization of the ulcer or gastroenterostomy or any other procedure you consider better? J H Boyd M D Trenton Mich.

ANSWER—Under the circumstances it would seem the better part of wisdom not only to remove the appendix but to attack the ulcer surgically. If conditions permit a pyloroplasty after the method of Judd could be carried out or a posterior gastroenterostomy made with excision of the lesion if it involves the anterior duodenal wall. It is also essential that the diseased teeth be removed in stages and that for at least a year the patient carry out the usual dietetic precautions, use tobacco and alcoholic drinks in moderation if at all, avoid physical and nervous fatigue and get at least eight hours of sleep each night.

SUSCEPTIBILITY TO YELLOW FEVER—IMMUNIZATION AGAINST ROCKY MOUNTAIN FEVER

To the Editor—How can I determine whether a man is susceptible to yellow fever? How can he be immunized against yellow fever? How can a man be immunized against Rocky Mountain fever? Please write me fully. Please omit name. M D Missouri.

ANSWER—Susceptibility to yellow fever may be determined by the mouse protection test of Sawyer and Lloyd. In this test anesthetized mice are first injected intracerebrally with sterile starch solution (0.03 cc of a 2 per cent solution); this procedure is for the purpose of localizing the virus in the brain. Immediately following this each mouse is injected intraperitoneally with a mixture of 0.2 cc of a 10 per cent suspension of virus-containing mouse brain and 0.4 cc of the serum to be tested. Six mice are treated in this way and also two control groups of six mice each: one control group with immune serum, one with normal serum. If five mice in the test group survive and the controls are successful the serum is considered pro-

tective, i. e. the individual is immune. If five out of the six die the serum is considered to have no protective value. Results deviating from these figures are regarded as inconclusive.

Immunization against yellow fever, as carried out by Sawyer and others in the laboratories of the International Health Division of the Rockefeller Foundation, consists in the subcutaneous injection of human immune serum of tested potency followed immediately by the injection of a dried mixture of living yellow fever virus fixed for mice and human immune sera. The immunity obtained in this way is comparable to that reached as the result of a natural attack of yellow fever. Details may be found in an article by Sawyer, Kitchen and Lloyd (*J Exper Med* 55:945 [June] 1932).

A vaccine against Rocky Mountain spotted fever has been prepared by Spencer from the ground viscera of infected ticks. Two or three inoculations of the vaccine give some degree of protection and apparently lessen the severity of infection when it does occur. The protective effect is not permanent but may last for several months. Information about the availability of this vaccine may be obtained from the U S Public Health Service.

USE OF SODIUM AMYTAL IN OBSTETRICS

To the Editor—In Queries and Minor Notes (*THE JOURNAL* August 5, p. 468) an answer is given a question for information regarding the use of sodium amytal in obstetrics. The answer reads that frequent narcotization of babies has been reported following the use of this drug. I should like to have the references to such opinions since in my experience with about a thousand obstetric patients to whom sodium amytal was given I have failed to observe even once that the babies were depressed as a result of the drug.

SAMUEL M DODER, M D Washington D C

ANSWER—Shir and Daichman (*Am J Obst & Gynec* 24:115 [Jul] 1932) report their experience with sodium amytal in 100 cases. There were no ill effects on the baby when small doses were used but no appreciable analgesia was obtained when the small amounts were employed. Of fifty-one cases in which the initial dose varied from 9 to 15 grains (0.6 to 1 Gm.) eleven babies were narcotized at birth. After pointing out the merits of sodium amytal the authors conclude that these advantages are greatly outweighed by the frequent occurrence of marked restlessness, an increase in the number of instrumental deliveries and frequently narcotized babies.

J J Swenson (*Minnesota Med* 13:868 [Dec] 1930) reports his experience with sodium amytal and says: "One third of the babies are somewhat apneic at birth apparently due to a torpidity of the respiratory center induced by the drug and require stimulation to establish respiration."

BREAST PAIN DURING MENSTRUATION

To the Editor—A woman of approximately 40 years, somewhat inclined to obesity and with large pendulous breasts complains of pain in both breasts for a period of from seven to ten days before each menstrual period. This pain is severe enough to be quite distressing. The breasts do not show any marked swelling at this time. Kindly suggest what mode of treatment would be most efficient for relieving the pain. Could you suggest any exercises or treatment that would tend to lessen the size of the breasts other than the reduction of the general body weight? Please omit name. M D Missouri.

ANSWER—Breast pain associated with menstruation appears to have become much more frequent during recent years than formerly. The explanation is not evident, the lessened adiposity of modern women, lack of exercise due to more automobile riding and the nervous strain of present day life are possible etiologic factors. In some cases the breasts are 'sympathetically' disturbed because of an ovarian growth or other genital disturbance. A pelvic examination is indicated in all these cases. As regards treatment comfortable clothing which does not exert undue pressure and employment of a supporting brassiere that lifts but does not press are essential. Acetilsalicylic acid gives comfort to some patients. Those who are nervous are helped by an alcoholic solution of phenobarbital or other sedatives. There is no specific treatment.

LEAD PIPING AND LEAD POISONING

To the Editor—I have a family that presents general symptoms of chronic lead poisoning. I am wondering whether the lead piping that connects the water service to this house could be responsible for many of the symptoms of chronic lead poisoning. I will appreciate any enlightenment on the subject. GEORGE A HOGAN, M D Birmingham, Ala.

ANSWER—In 1928 Wright and his associates (*J Indust Hyg* 10:214 [Sept] 1928) reported on a survey embracing 102 lead conducted water supplies. The study embraced chemical and clinical observations. All waters analyzed contained lead. The lead content was most intimately related to the

carbon dioxide content. There was no apparent relation between the length of pipe and the lead content. Of ninety sources used by the persons studied, thirty-five caused poisoning as determined by certain criteria. Of 253 exposed persons, 63, or 24.9 per cent, were poisoned. Poisoning occurred among fourteen persons ingesting as little as 0.1 mg. of lead daily, over an average period of eight and one fourth years.

The incidence of poisoning was distinctly lower in children under 10 years of age than among children from 10 to 20 years old or among adults, and was greater among adults than among children under 20. The duration of exposure, except for short periods, was not significant in its relation to the incidence of poisoning. The incidence of poisoning was quite uniform among those ingesting varying amounts less than 15 mg. daily but was much greater as this amount was exceeded.

IODIZED OIL FOR PNEUMOGRAPHY

To the Editor—Several years ago in answering a communication from Dr. J. D. Riley of the State Sanatorium, Booneville, Ark., you stated that a bronchogram with iodized poppy seed oil was contraindicated in pulmonary tuberculosis. Since that time many hundreds of bronchograms have been made in patients having the exudative and fibrocavernous type of pulmonary tuberculosis with positive sputum and I should be glad if you would let me know if your attitude in regard to this procedure has changed.

B. L. CHURLEY, M.D., Paterson, N. J.

ANSWER—This procedure, utilizing such agents as iodized poppy-seed oil, is practically harmless, with the exception of those instances in which pulmonary hemorrhage may be present and the oil may aid in producing a blockage of a bronchus with a consequent atelectasis or in which the production of such a bronchial obstruction in the presence of large amounts of sputum may prevent proper drainage and cause symptoms of absorption to occur. The earlier ideas contraindicating the use of iodized oil were based on erroneous thoughts concerning the action of iodine in tuberculosis. Pure iodine in solution does not affect tuberculous tissue adversely when utilized in dilution as is found in substances such as iodized oil or when taken by mouth therapeutically. It is only the alkaline iodide salts such as potassium and sodium which, by causing dissolution of necrotic tuberculous tissue and increasing secretions from the bronchial mucosa, allows a "spilling over" of the new admixture of such secretions and necrotic tissue containing large numbers of tubercle bacilli, permitting of endogenous reinfection with its consequent extension of the pulmonary disease.

The presence of pulmonary tuberculosis, when one wishes the additional aid of pneumography in outlining such conditions as bronchiectasis or bronchogenic carcinoma obstructing the lumen of a bronchus or possible bronchial fistula does not prevent its use. One should observe the ordinary precautions of technic necessary in a tuberculous individual.

SPONTANEOUS RUPTURE OF VEINS

To the Editor—A young white woman is having a series of spontaneous venous ruptures both superficial and deep. The veins are not varicose and do not seem hard or brittle. Physical examination is essentially negative. The urine is normal, the coagulation time is normal, the blood picture is normal, the blood sugar is normal. The family history is irrelevant with the exception of diabetes in the father. A rupture of a large vein in the leg resulted in sufficient venous stasis to necessitate rest in bed over a period of eight weeks before enough circulation was reestablished to permit walking. I would appreciate comments on this case as to prognosis and treatment and also would appreciate a speedy reply. Please omit name.

M. D. New York

ANSWER—In cases of spontaneous venous hemorrhage, various types of hemorrhagic purpura, caused by infection, avitaminosis or thrombopenia, must be first excluded. Besides the coagulation time, which is normal in purpura, the bleeding time, clot retractility, platelet count and constriction test are most helpful. These tests need little equipment and may give important information. In a certain group of young women all these tests are negative, the blood calcium is normal and yet there is a marked tendency to bruise easily because of an increased fragility of the vessel wall. This is often hereditary. It is not surprising that endocrine products, particularly parathyroid, ovarian and pituitary extracts, have been indiscriminately used in these vague and poorly understood disorders. Large doses of calcium gluconate, from 2 to 4 Gm. (30 to 60 grains) three times a day seem to cement the vessel wall against such injuries and certainly influence the edema favorably.

One must think also of rare neurotrophic petechial hemorrhages, which accompany cord lesions. An injury no matter how trivial it may seem may be the causative factor if the vessels rupture easily. It is not clear why the correspondent makes the diagnosis of a rupture of deep veins. In all probability the saphenous area and perhaps some muscle veins are

affected. As a final possibility, the rare syndrome of endothelioplasmic dystrophy of Weill and Block is suggested which is characterized by a nonretractile clot, capillary hemorrhages and a seemingly aseptic thrombosis in the larger veins. Consultation with a man specially interested in this field might clarify the diagnosis, prognosis and treatment.

MOON BLINDNESS IN HORSES

To the Editor—Because I am an ophthalmologist a personal friend has asked me to see a valuable saddle horse suffering from so-called moon blindness. I have no idea what moon blindness may mean in animals but I take it that this is a form of interstitial keratitis because the objective symptoms seem to be of that type. The veterinarian is giving this horse injections of neosphenamine. Can you tell me or refer me to a source of information regarding this condition?

WALTER STEVENSON, M.D., Quincy, Ill.

ANSWER—Moon blindness in horses corresponds fairly closely to uveitis in the human being and can best be treated along similar lines. A few years ago, Rankin investigated a series of cases of moon blindness in one of the racing stables of Kentucky. Injections of whole milk were used beginning with 1 cc. and not exceeding 2 cc., given on alternate days. Atropine ointment was used in the eyes. The owners reported that all the horses treated were improved and that some of them recovered vision entirely. It was the most effective treatment that had ever been administered in their stables. Care must be taken with the use of foreign protein injections in horses, for they are extremely susceptible to a dose that would not have any influence on a child.

UNILATERAL ATROPHY OF BREAST

To the Editor—Will you kindly give me any information you can regarding unilateral atrophy of the female breasts? The case in mind concerns a woman, aged 23, who otherwise appears to be in perfect health and has had no pregnancies. The menstrual periods are rather scanty and irregular and are frequently missed. The right breast is about 25 per cent smaller than the left and considerably more pendulous, suggesting atrophy of the glandular structures and fatty tissues. Any information you can give me regarding the cause and treatment of this condition will be appreciated. Please omit name.

M. D. Wisconsin

ANSWER—Little is known about unilateral atrophy of the female breast. As a rule, unilateral atrophy is an expression of unilateral hypertrophy of the other breast. Most cases of atrophy of the breast occur after pregnancy, and for some reason or other there are usually one or more abscesses in one or both breasts. There are cases of atrophy of the breast associated with malnutrition. Atrophy of the breast is rare except senile atrophy which is always present when people are underweight and atrophy following multiple abscesses of the breast during pregnancy and lactation. This unilateral atrophy in a girl of 23 who has never had children is most unusual.

TREATMENT OF ENDOCRINE OBESITY

To the Editor—A woman, aged 44, was operated on for inward goiter about two months ago by a competent surgeon. The patient felt better for a while but now feels as bad as she did before the operation. She gets out of breath and tires easily. She gained 15 pounds (6.8 kg.) of adipose tissue below the ribs and above the umbilicus. This flesh looks like an automobile tire hung about her. On the rest of the body the fat does not show. Her weight now is 158 pounds (71.7 kg.) while formerly she always weighed 145 pounds (65.8 kg.). The pulse is 90 and the basal metabolic rate +21 per cent. The history otherwise is negative except for a fibroid tumor in the muscle of the uterus. She has had this tumor for several months. The distress is from the accumulation of fat around the lower part of the ribs pressing on the heart especially when she is bending down. Will this fat gradually leave as the body becomes adjusted? What can be done for her for temporary or permanent relief? Any suggestions will be gratefully received. Please omit name and address.

M. D. Iowa

ANSWER—It is unusual to have such a local fat deposit although it is by no means rare for thyroidectomy to result in considerable deposits of fat. The localization of the fat areas around the girdle suggests some pituitary disturbance. There is no reason to anticipate that the fat will leave unless some type of endocrine therapy is used. The basal metabolic rate of +21 per cent does not warrant the use of much thyroid, although it can be employed in small doses under careful observation. A dose of 0.03 Gm. of thyroid extract a day is recommended as a start. It might also be wise to add injections of solution of pituitary, 1 cc. every other day. This, like the thyroid, must be considered in the nature of experimental therapy.

In addition to the specific endocrine treatment, massage of the parts involved and a low caloric diet will be necessary to attain any results.

EFFECTS OF FACE CREAMS ON SKIN

To the Editor—Will you please state what effect face creams have on the skin? Do they have a tendency to prevent wrinkles? Please omit name

M D Missouri

ANSWER—Face creams supply fat when nature fails to do so. The fat is an important ingredient of the skin keeping the horny layer soft, flexible and water tight and forming over it a thin, protective film. The lack of fat predisposes to sunburn or windburn in summer and chapping in winter, both of which lead to earlier aging of the skin. They can be prevented by the use of cold cream and other means of protection of the skin. Owners of blonde skins that do not tan should begin taking precautions against irritation early in life, for only then can effective work in this line be done.

Face creams, used for cleansing dry irritable skins, also prevent irritation by soap which would be necessary were the cream not available. Wrinkles are one sign of aging of the skin, and anything that will prevent these irritations helps to postpone the onset of wrinkles.

EFFECTS OF TEAR GAS ON EYE

To the Editor—Will tear gas shot directly into the eyes by the small cartridges carried by police officers cause blindness or severe enough injury to the cornea to affect the vision?

CLARENCE MINNICK M D Cambridge, Neb

ANSWER—That depends on the distance between the eye and the pistol. If the distance is short, possibly less than 2 or 3 feet, the chloro-acetophenone is still in liquid form and can produce severe chemical injury to the cornea that will undoubtedly result in marked loss of vision or even complete loss of the eye. But if the liquid has had an opportunity to become converted into the gaseous form, practically no danger is to be anticipated. Of course there is a severe reaction of the eye to the irritation of the gaseous chloro-acetophenone, hence the name tear gas, but the danger of permanent injury is slight. Even if the liquid form reaches the eye the McNally sodium sulphite treatment can avert serious damage, if applied early and thoroughly.

ARTHROPLASTY OF HIP JOINT

To the Editor—Kindly give some information regarding Murphy's operation for arthrodesis of the hip joint. I should like to know the general percentages of success, what is the usual range of motion expected and just how long before a person can resume ordinary walking provided the operation is a success and there are no complications. Is there usually more or less continued pain after the joint is made useful? The books that I have give the operative technique in detail but too little explanation of the after effects. Your information will be appreciated. Please omit name.

M D Florida

ANSWER—Arthroplasty as performed by Dr John B. Murphy from 1903 to 1916 has been considerably modified in that a free transplant is now being used instead of the pedicle flap transplant as outlined by him. Otherwise the essentials of the arthroplasty remain the same. The examination of hip joints on which operation was performed during 1908 to 1918 disclosed that satisfactory results were obtained in about 60 per cent of the cases. Since the modified operation has been used, the proportion of satisfactory results has increased to about 75 per cent. One noted orthopedic surgeon reports as high as 80 per cent good results in operation on the hip. The usual range of motion hoped for in this operation is that the patient may comfortably sit erect and that ordinary walking should be resumed in approximately eight weeks. The complications one occasionally sees are those of infection and a return of the stiffening of the joint. In cases in which the joint has been well formed and no infection has ensued, the amount of pain is negligible.

TREATMENT OF SPINAL CORD LESIONS IN
PERNICIOUS ANEMIA

To the Editor—I have a patient with pernicious anemia. She has also a posterolateral sclerosis which is due to her anemia. Under liver dilute hydrochloric acid and iron ammonium citrate she has responded well. The condition of her hands does not improve. She has numbness and loss of touch sensation as well as a partial paralysis of the extensor and flexor groups. Can you tell me of anything that might improve this condition? Please omit name.

M D New York

ANSWER—The treatment of the spinal cord lesions that are associated with pernicious anemia now constitutes the major problem in the management of the disease, as they show much less improvement following liver or stomach therapy than does the anemia. The first principle in the treatment is to give liver, liver extract or desiccated hog stomach in adequate amounts until the hemoglobin is between 85 and 100 per cent

and the red blood cell count is between 45 and 5 per cubic millimeter. It is important that the blood should be brought to an entirely normal condition and maintained there by appropriate therapy. In some cases it may be necessary to administer liver extract intramuscularly or intravenously in order to accomplish this.

Recently satisfactory improvement has been reported when fresh ox brain has been given in addition to the liver or stomach medication. As much as a pound of ox brain may be given daily, if it is ground in the finest meat grinder and one-fourth pound mixed with a glass of grape juice. This amount may be administered four times daily.

The patients should be urged to exercise the arms and legs but cautioned to avoid excessive fatigue.

AMEBIASIS

To the Editor—Is it possible for a man to have amebic dysentery and not be able to demonstrate amebas in the stool? Please omit name and address.

M D Minnesota

ANSWER—Before the development of modern cultural methods it was not infrequent to find persons harboring *Endamoeba histolytica* in whose stools it was difficult to demonstrate amebas by microscopic examination for extended periods. These negative periods still occur but are much rarer with cultural methods. Some clinicians who believe in various generalized symptoms of amebiasis have described more or less obscure symptoms in these periods, but it would be unlikely to have a patient suffering from frank dysentery and not to be able to demonstrate amebas by culture for any length of time.

MALARIA IN FLORIDA

To the Editor—What are the dangerous months of the year for infection with malaria in St. Petersburg, Fla.? Kindly omit name.

M D, Ohio

ANSWER—It would be possible to become infected with malaria in St. Petersburg, Fla. during any of the time between May and November, depending on the particular conditions of rainfall and temperature for a particular year. Although Mayne found infected *Anopheles quadrimaculatus* mosquitoes as early as May 15 in Bolivar and Washington counties, Miss., and as late as November 1 at Lenoir, La., more than half of the natural transmissions by mosquitoes probably usually occur during August and September.

ACTIVE IMMUNIZATION AND PASSIVE IMMUNITY

To the Editor—In answer to the request of Dr. Daly for information concerning the advisability of instituting active immunization prior to the complete disappearance of passively conferred immunity, it was stated (THE JOURNAL, January 21, p. 211) that there seems to be no good reason why active immunization should not be started before the termination of the period of passive immunity. The value of such a procedure may be questioned, as pointed out by Dr. Schagen (THE JOURNAL, May 20, p. 1628). These diverse opinions have been of special interest to me since I have been engaged on an experimental study of this problem for the last two years. While identical in principle with the problem outlined, my work has been limited to the simultaneous production of active and passive immunity in animals previously injected with tetanus spores. Successful results in the latter case are rendered more difficult than in the case of diphtheria owing to the frequent persistence in injured tissues of tetanus spores which may germinate and produce intoxication the moment passive immunity has decayed below a protective level (a period of approximately eight to ten days). It has been found that toxoid (treated with formaldehyde) alone is of little or no value in stimulating the production of active immunity in passively immunized animals and infected animals invariably die. If however one substitutes for the toxoid a mixture of toxoid and alum (Glenny) agar or tapioca (Ramon) or injects toxoid in the form of an olive oil emulsion (Strauch, C. B. Repository, Injections, THE JOURNAL, April 6, 1929, p. 1177) active immunity is readily produced in passively immunized animals. Following subcutaneous injection these preparations are quickly killed off as the result of the intense cellular reaction that takes place and are thereby protected against immediate neutralization by antitoxin. The injections should be repeated at least three times at intervals of from three to even days. This procedure appears to have no noticeable effect on the efficacy of antitoxin therapy which may be carried out exactly as though no toxoid had been injected. The method results in permanent active immunity by the time the passively conferred antitoxin (one or more injections) has disappeared.

PHILIP L. VARNER, M.D., St. Louis

ONYCHOMYOSIS

To the Editor—In THE JOURNAL, August 5, I received a query concerning onychomycosis. The *Wiener medizinische Wochenschrift*, August 4, highly recommends for this disease one or two French baths daily followed by the application of one drop of tincture of iodine on the bed of the nail. A normal growth of the nail is reported in the case.

ROBERT C. VANCE, M.D., Los Angeles

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILIOLOGY *Written*
Boston Chicago Cleveland New York Philadelphia St Louis and San
Francisco Oct 28 *Oral* New York Dec 15 16 Sec Dr C Cny
Irene 416 Marlboro St Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY *Written (Group
B Candidates)* The examinations will be held in various cities of the
United States and Canada Dec 9 Application necessary before Nov 1
Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh

ARKANSAS *Basic Science* Little Rock Nov 6 Sec Mr Louis I
Gebauer 701 Main St Little Rock *Regular* Little Rock Nov 14
Sec Dr A S Buchanan Prescott *Homopathic* Little Rock Nov 14
Sec Dr Allison A Pringle Fayette Springs *Ectetic* Little
Rock Nov 14 Sec Dr I J Marshall 401 W 3d St Little Rock

CALIFORNIA *Regular* Sacramento Oct 16 19 *Reciprocity* Sacra-
mento Oct 16 Sec Dr Charles B Imkham 420 State Office Bldg
Sacramento

CONNECTICUT *Basic Science* New Haven Oct 14 *Prerequisite to
license examination* Address State Board of Healing Arts 159 1/2 Yale
Station New Haven *Regular* Hartford Nov 14 15 *Endorsement*
Hartford Nov 28 Sec Dr Thomas P Murdock 147 W Main St
Meriden *Homopathic* New Haven Nov 14 Sec Dr Edwin C M
Hall 82 Grand Ave New Haven

FLORIDA Jacksonville Nov 13 14 Sec Dr William M Rowlett
Box 786 Tampa

GEORGIA Atlanta Oct 10 Joint Sec Mr R C Coleman 111 State
Capitol Atlanta

ILLINOIS Chicago Oct 17 19 Supt of Regis Mr Eugene R
Schwartz Springfield

MAINE Portland Nov 14 15 Sec Dr Adam P Leighton Jr
192 State St Portland

MASSACHUSETTS Boston Nov 14 16 Sec D Stephen Rushmore
144 State House Boston

MICHIGAN Lansing Oct 10 12 Sec Dr J L McIntyre 202 3 4
Hollister Bldg Lansing

MINNESOTA Minneapolis Oct 17 19 Sec Dr E J Ingberg 350
St Peter St St Paul

MISSOURI Kansas City Oct 17 19 State Health Commissioner
Dr E F McLaughy State Capitol Bldg Jefferson City

NEVADA Carson City Nov 6 Sec Dr Edward E Hamer Carson
City

NEW JERSEY Trenton Oct 17 18 Sec Dr James J McGuire 28
W State St Trenton

NEW MEXICO Santa Fe Oct 9 10 Sec Dr P G Cornish Jr 221
W Central Ave Albuquerque

RHODE ISLAND Providence Oct 5 6 Dir Dr Lester A Round 319
State Office Bldg Providence

SOUTH CAROLINA Nov 14 Sec Dr A Earle Boozer 50 1/2 Saluda
Ave Columbia

Alabama July Examination

Dr J N Baker secretary Alabama State Board of Medical
Examiners reports the written examination held at Mont-
gomery, July 11-14, 1933 The examination covered 10 subjects
and included 100 questions An average of 75 per cent was
required to pass Ten candidates were examined all of whom
passed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Rush Medical College		(1933)	84.2
Tulane University of Louisiana School of Medicine		(1933)	77
809 813 836 838 86 87 8			
Medical College of Virginia		(1933)	83.7
Osteopath			79.6

Fifteen physicians were licensed by reciprocity from April 17
to July 10 The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Atlanta College of Physicians and Surgeons		(1910)	Georgia
Emory University School of Medicine		(1932)	Mississippi
University of Georgia Medical Department		(1932)	Georgia
State University of Iowa College of Medicine		(1931)	Iowa
Tulane University of Louisiana School of Medicine		(1930 2)	
(1931) (1932) Louisiana			
Johns Hopkins University School of Medicine		(1929)	Maryland
University of Michigan Department of Medicine		(1908)	Michigan
Meharry Medical College		(1929)	Tennessee
Vanderbilt University School of Medicine		(1928)	Tennessee
Medical College of Virginia		(1929)	Virginia
University of Virginia Department of Medicine		(1930)	Virginia

*This applicant has received a four year certificate and will receive an
M D degree on completion of internship

Vermont June Report

Dr W Scott Nay secretary, Vermont State Board of
Medical Registration reports the written examination held at
Burlington June 21-23 1933 The examination covered 12 sub-
jects and included 90 questions An average of 75 per cent
was required to pass Twenty-five candidates were examined

all of whom passed Two physicians were licensed by endorse-
ment The following colleges were represented

College	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine		(1925)	80.9
University of Vermont College of Medicine		(1932)	80.1
811 818 822 (1933) 801 804 811 816 818			81.9 83.3 83.6
842 858 868 874 882 898 909 915 922			
McGill University Faculty of Medicine (1931)		82.9 (1932)	81.1

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Boston University School of Medicine		(1932)	N B M Ex
University of Vermont College of Medicine		(1932)	N B M Ex
*Grade not reported			

Book Notices

Röntgenographic Studies of the Urinary System By William L
Lower M D F A C S Chief of Department of Urology Cleveland Clinic
and Bernard H Nichols M D F A C R Chief of Department of Roent-
genology Cleveland Clinic Cleveland Ohio Cloth Price \$16 Pp 81
with 812 Illustrations St Louis C V Mosby Company 1933

This book, compiled by a urologist and a roentgenologist has
successfully accomplished the purpose of its authors "to empha-
size the need for close correlation between the urologist and
the roentgenologist, and to show by the actual reproduction of
many films what the roentgenologist may expect to find in the
presence of various lesions and to indicate the proper inter-
pretation of the shadows which are present" The method of
presenting the facts in each case is unique It is brief, clear
and concise and in a small space gives the reader all the
important information leading up to the diagnosis First the
sex and age are stated Then the roentgenographic appearance
is described although at first sight this may appear brief in
practically every case the description is complete Under the
heading of history the chief complaints of the patient are men-
tioned This is followed by the urinary and cystoscopic examina-
tions the operation and finally the diagnosis On the opposite
page the roentgenograms are reproduced These are excellent
clear cut reproductions in which a successful effort has been
made to visualize the changes present in each case The roent-
genographic examination of each part of the urinary tract is
taken up in an orderly manner beginning with the male urethra
A chapter is devoted to the bladder ureter and kidneys Again
at first sight these descriptions appear to be quite brief but
after reading them one is satisfied that nothing has been omitted
The chapter on intravenous urography covers the history of
the method the technic indications and contraindications and
concludes with a discussion of the interpretation of the urogram
made by this method A chapter is devoted to the indications
for a roentgenographic examination of the upper right abdominal
quadrant This is most instructive because it covers the area
where mistakes in diagnosis are only too commonly made and
the differential diagnosis is often difficult This volume should
be of interest to both urologist and roentgenologist and should
have a place in the library of those who are interested in the
diagnosis and surgery of the urinary tract

*Medical State Board Examinations Topical Summaries and Answers
An Organized Review of Actual Questions Given in Medical Licensing
Examinations Throughout the United States* By Harold Bylins A B
M D Secretary New York State Board of Medical Examiners Cloth
Price \$4.00 Pp 448 Philadelphia Montreal & London J B Lippin-
cott Company 1933

This book is unique of its kind and is different from others
of a similar title The author shows himself thoroughly familiar
with the problems of the medical student when he approaches
a licensing board for his right to practice The advice given
to candidates in the foreword is not only sound but if read
with understanding and appreciation before taking the exami-
nation will be of more help and value to the candidate than
will the hasty perusal of the text in the hope of finding categori-
cal answers to stereotyped questions The text is a clear
and concise presentation of the subject, which is handled in a
manner that will convey to a reader an understanding such
as will enable him to answer intelligently almost any question
pertaining to it There are twelve chapters each dealing with
one of the subdivisions of general medicine on which questions
are usually asked by licensing boards At the end of each

chapter is found a series of questions, answers to which can be given after reading the chapter with intelligent comprehension. Questions dealing with the same subject matter can be asked in a variety of ways. The student should not attempt to memorize parrot like answers to certain questions but should try to acquire an understanding of the subject when he will be able to give intelligent answers to questions, however they may be put.

Whitla's Pharmacy, Materia Medica and Therapeutics. Twelfth edition revised by J. A. Gunn M.A. M.D. D.Sc. Professor of Pharmacology in the University of Oxford. Assisted by H. Berry B.Sc. Ph.C. A.I.C. Head of the Department of Pharmacy, Birmingham Central Technical College and J. Clifford Hoyle M.D. M.R.C.P. Medical First Assistant and Demonstrator in Pharmacology, London Hospital. Cloth. Price \$4.25. Pp. 645 with illustrations. Baltimore: William Wood & Company, 1933.

As this textbook was first issued in 1881 the present edition celebrates more than half a century of service. It has the merit of introducing the medical student to a sufficient knowledge of pharmacy and of materia medica that he should be able to write satisfactory prescriptions. The book reflects the nomenclature as well as the preparations of the new edition of the British pharmacopoeia. Therapeutic use of the drugs is taken up in their alphabetical order which makes the book perhaps more useful for purposes of reference but less useful as a textbook because substances like digitalis and strophanthus, which should be studied together are widely separated by the alphabetical arrangement. There is also a chapter dealing with nonofficial remedies, which together with an index of poisons and their antidotes, makes the book a valuable manual to the British physician. Thoroughly in keeping with the conservative nature of our British confreres the book still clings to Latin terminology in prescribing even to the extent of rendering the directions to the patient in Latin. Another criticism that one can hardly help leveling against the general trend of the prescription writing as advocated in this and most similar publications emanating from the British Isles is that little attention if any is paid to elegance or to the palatability of the finished prescription.

Natural Childbirth. By Crantley Dick Read M.A. M.D. Cloth. Price 7s. 6d. Pp. 127 with 3 illustrations. London: William Heinemann, 1933.

Every physician who cares for women patients is aware that the element of fear much of it resulting from old women's tales, is one of the serious complications of pregnancy and labor that he must combat. Nevertheless it is a fact that the average physician does not appreciate the part played by fear in increasing the difficulties of labor. The author discusses the mechanism and management of labor from a point of view that will be of great value to every one who reads it. Within recent years methods of analgesia and anesthesia have been presented by various writers with too little regard for factors that are of the greatest importance in promoting eutocia. This work should help obstetricians to secure a more normal point of view. It is hoped that this monograph will be widely read and that the psychologic suggestions which he offers may be utilized to a greater degree in the practice of obstetrics.

Diet in Sinus Infections and Colds. By Egon A. Ullmann M.D. Instructor at the First Medical Clinic at the University of Vienna. Reclipses and Menus. By Elsa Mez. Cloth. Price \$2. Pp. 166. New York: Macmillan Company, 1933.

This small book dealing with the diet in sinus infections and colds is one of the few complete works on this subject. The author does not proclaim that the proper dietary is a cure all for these conditions but emphasizes its value as a prophylactic measure as well as an adjuvant to other forms of therapy. The first part of the book deals with the development of the modern diet. The scientific data for this diet are presented and the influence of various foods is discussed. A short chapter is devoted to each of the following proteins: the alkaline diet, bread, potato, fruits, spices, spicy vegetables and fats. The importance of calcium and the restriction of salt is explained. The main characteristics of the recommended diet are the use of only fresh food, restriction of salt, a preference for alkaline food, a reduction of animal proteins and a restriction of carbohydrate. Unrefined carbohydrates are used whenever possible. The purpose of the diet is to counteract acidosis to

increase the effect of calcium in the system and to prevent an eventual lack of vitamins. The second part of the work deals with the application of this diet when and what to eat, and the preparation of the food. In discussing the management of the patient the author takes up the various possibilities for error and the importance of looking for mistakes if complications arise or the results are not as anticipated. A short chapter is devoted to testing of the urine for chlorides and its acidity. There is a fine bibliography and a supplemented appendix of recipes and menus by Elsa Mez, which should be of considerable value. Although no definite proof for the efficacy of this diet is given aside from the author's personal experience the recommendations are along the lines suggested and used by other men interested in the subject. This topic has gained in importance in the last few years and an understanding of this form of therapy should prove a valuable asset to those who are interested in colds and sinus infections.

Small Pox in Egypt: Its History and Control. By Dr. Ahmad Hilmy Bey, Assistant Under Secretary of State for Public Health, Ministry of the Interior, Egypt. Department of Public Health. Cloth. Pp. 29. Cairo: Government Press, 1933.

Here is an interesting little brochure giving a brief history of smallpox in Egypt and describing the methods used for control. At the time of the latest epidemic (1926) only about 300,000 out of the population of 500,000 in Alexandria had been vaccinated. The general vaccination of the Egyptian population put into effect as the result of that epidemic has reduced the number of cases to the lowest point ever known (ten in 1931). The attempt is being made to have all vaccinations performed by medical officers instead of, as heretofore, by sanitary barbers.

The Visual Fatigue of Motion Pictures: A World Wide Summary and Survey. Compiled and edited by Aaron E. Singer. Paper. Price \$1. Pp. 48. New York: Amusement Age Publishing Company, 1933.

Even at the present depreciated value of the dollar, the price of this booklet is about 55 cents too high. It purports to be a summary of current scientific opinion as to the question of visual fatigue in the movies but consists mostly of a series of quotations, a large share of which are either misquoted or else wrong. For example "The iris of the eye represents a lens of a camera" or "Any eye which has an anomaly will suffer [from motion pictures] from one or more of the following symptoms, headaches, neuralgia, congestion of the conjunctiva, blinking, burning, black spots before the eyes, diminution in acuteness of vision, eyestrain, double vision and blurred vision" and so on ad nauseam. Optometric opinions are quoted freely as are lay opinions on ophthalmologic topics. The recently patented shutter-spectacle and the much publicized "Fenbloom telescopic lens" which has been in use by the ophthalmologists for a good many years are earnestly advocated. On the whole it is rather difficult to see just what the author is driving at but whatever it is, he missed it.

Obstetrics for Nurses. By Joseph B. DeLee A.M. M.D. Professor of Obstetrics and Gynecology, University of Chicago. Tenth edition. Cloth. Price \$2.75. Pp. 666 with 269 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

This is still the most popular book on obstetrics for nurses as testified to by the fact that ten editions and numerous reprintings have appeared since it was written twenty nine years ago. Its reputation is richly deserved because it is in every sense of the word a practical book based on the author's extensive experience as a practicing obstetrician and as a teacher. There is in the book for nurses the same personal touch that characterizes the author's textbook for medical students and practitioners. The language is in terms which any nurse can understand and easily remember. The illustrations are abundant and unsurpassable for their clearness and instructiveness. The typography is excellent. The material which contains all that a nurse should know about obstetrics has been brought down to date so that the book contains information about the most recent scientific as well as practical advances including the highly useful Aschheim Zondek test. The chapter on infant feeding was contributed by Dr. Arthur Abt and is a valuable addition. At the end of the book is an outline of study which has proved to be helpful for nurses training schools. Without doubt the present edition will increase still more the popularity of this standard textbook.

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The Common Causes of Chronic Indigestion Differential Diagnosis and Treatment By Thomas C. Hunt, B.A., D.M., M.R.C.P., Physician to Out Patients and Junior Medical Tutor, St. Mary's Hospital, London. Cloth. Temporary price \$3.50. 1 p. 341 with 16 illustrations. Baltimore: William Wood & Company, 1933.

This book is a practical outline of the common causes of chronic indigestion. The term chronic indigestion is probably not the best one, but the author has defined indigestion as a name signifying a certain group of abdominal symptoms and adds that unfortunately there is no constant relationship between these symptoms and their cause. The causes described are chronic peptic ulcer, chronic gastritis, carcinoma of the stomach, achlorhydria, flatulence, gallbladder indigestion, chronic appendicitis, functional disorders of the colon, diverticulitis, nervous indigestion, the cardiovascular system and indigestion, alcohol indigestion, and indigestion in old age. These subjects are presented clearly and briefly. The chapters on gallbladder indigestion, functional disorders of the colon and nervous indigestion are excellent and the chapters on the cardiovascular system and indigestion, and indigestion in old age, will interest the specialist as well as the general practitioner. Diagnosis, differential diagnosis and treatment constitute the main outline of each topic discussed, but the author has managed to include the recent literature. A chapter is devoted to laboratory methods and another to history taking. This should be of value to the general practitioner and the student. The importance of laboratory tests is emphasized as related to the clinical observations. The illustrations are good. The bibliography is short but good. The book should be of value to the general practitioner and to the student who wishes more information on gastrointestinal diseases than is ordinarily furnished in standard textbooks of general medicine.

Phylogense und Geschwulstentstehung Von Dr. Max Clogner. Paper. Price 1.60 marks. 1 p. 32. Leipzig: Johann Ambrosius Barth, 1933.

The author presents his theoretical views on the etiology of malignant tumors. He opposes the old ontogenic theory of tumor formation, according to which the cells of a malignant tumor are alleged to arise from tissue cells in a comparatively brief period, and favors the phylogenic theory, according to which the malignant cell is a descendant of those early protozoan cells that were responsible for the formation of the first multicellular protozoan organisms. While most of these protozoan cells are later transformed into metazoan cells, some of them retain their protozoan characteristics within the metazoan organism despite a phylogenic development covering perhaps millions of years. Thus the protoplasm of the malignant cell, derived from the earliest period of organic life, is continually being transmitted by way of the germinative substance of the sex cells. In support of his theory the author mentions the morphologically and physiologically similar behavior of protozoan cells and malignant cells, the experimental heredity of malignant disease, the universal occurrence of malignant disease in the human and animal kingdom, and the frequent changes in the stage of development of malignant disease.

Massage and Remedial Exercises in Medical and Surgical Conditions By Noel M. Tidy, Sister in Charge of the Massage Department, Princess Mary's Royal Air Force Hospital, Halton. Cloth. Price \$5.25. Pp. 429 with 178 illustrations. Baltimore: William Wood & Company, 1933.

This book contains much more than the title indicates so that it was necessary to crowd the subject material. This necessitated the use of type that is entirely too small for a textbook. One is struck by the similarity to Hey Groves' *Synopsis of Surgery*. The book contains so much surgical treatment that it might be used as a textbook for students of surgery. There is a poor distribution of space allotted to the various subjects. The physical treatment, which was the primary object in writing the book, is in many instances crowded while material extraneous to the title is given more space. For example on page 142 nearly a whole page is given to the subject of symptoms, with only a few lines referring to the physical treatment. The author was wise in the selection of material she has drawn from Mennell, Hey Groves, Jones and Lovett, and Tubby. The subjects covered include stiff joints, diseases of joints, synovitis, arthritis, tuberculosis, bursitis and diseases of bone. The subject of nervous diseases is treated extensively and makes the book unbalanced. Lesions of peripheral nerves, functional nervous diseases, diseases of muscles, foot disorders, deformities, diseases of the heart, diseases of blood and lymph vessels,

respiratory organs, and abdominal and pelvic disturbances are discussed. In the discussion on tennis elbow, no mention is made of the importance of a bursa. The author is to be commended for her description of the position of the patient who is to be given a physical treatment. For a book on massage and remedial exercises, \$5.25 seems to be a lot of money.

Diabète et Insulinémie Par Jean La Barre, chargé de cours à l'Université de Bruxelles. Préface du Professeur E. Zunz. Paper. Price 40 francs. 1 p. 284 with 15 illustrations. Paris: Masson & Cie, 1933.

This presents an excellent critical study of the physiologic and pathologic variations of insulinemia. The experimental work has been done from many angles, showing variations of insulin secretion under different conditions, which forms a basis for understanding and also for therapy. Much in the book presents the author's own painstaking experimental work over a period of years, and each chapter covers a critical review of investigations carried out by other workers all over the world. Two thirds of the book represents experimental work and review of the literature, and one third represents treatment and general considerations. For any one who wants to acquaint himself with the status of the extensive experimental work on diabetes and insulin, this book is a real treasure, each page full of information. It should be read by all who treat patients with diabetes, as it will give them a more thorough understanding of the underlying physiopathology.

The Science of Human Reproduction Biological Aspects of Sex By H. M. Marshley, Sc.D., Professor of Zoology, Smith College. Cloth. Price \$3.50. Pp. 319 with 66 illustrations. New York: W. W. Norton & Company, Inc., 1933.

The social revolution has resulted in a demand for scientific information regarding the biologic aspects of sex. Other authors have dealt with the subject of sex from different points of view. This book presents only those aspects which rest securely on a sound biologic basis. The first part deals with the different physical and psychologic characteristics of men and women. Next the author considers the zoology of reproduction, the organs of reproduction and their manner of functioning. The chapter on the endocrinology of sex is excellently written and contains an outline of the latest scientific developments. The biology of human sex behavior is presented in the concluding chapter. Few books have treated the subject so comprehensively and scientifically. The literary style of the author is interesting and engaging. The bibliography offered to supplement the text has been well chosen and is a valuable addition. This book is highly recommended to the physician as well as the layman. Few modern works have presented the subject with such scientific accuracy and refreshing literary style.

Value of Blood Grouping in Anthropology By Tanemoto Furuhashi, M.D., Professor of Forensic Medicine, Kanazawa Medical College, Kanazawa, Japan. Paper. Pp. 22 with illustrations. Kanazawa, Japan: Hoigaku Kyositu Kanazawa Idai Gakku, 1933.

This pamphlet is devoted mainly to the presentation of a series of tables giving the result of studies on blood grouping in Japan. Studies performed in Furuhashi's laboratory on 1,595 families with 3,636 children fully confirm the theory of triple allelomorphs. However, Furuhashi fails to give proper credit to Bernstein who first developed this theory of heredity of the blood groups in 1925. In the Japanese empire, the blood groups of a total of 324,565 individuals have been determined, studies having been made in each of the forty-seven prefectures. There is no striking difference in distribution of blood groups in any prefect, and the average frequencies are: group O, 30.50 per cent; group A, 38.22 per cent; group B, 21.99 per cent; group AB, 9.38 per cent. On the other hand, rather striking differences were found among the Koreans, Formosans, Ainu and Micronesians. Studies have been made in Japan on 384 fetuses between the second and ninth months of gestation. As early as the third month the distribution of the blood groups closely approximates that of adults and the blood groups could often be determined as early as the second month. No correlation was found between blood groups, girth of chest and length of body. Finally, tables and charts show the distribution of the blood groups in the peoples of the world. The value of this method of demonstrating the relationship between races was first pointed out by the Hirsfelds in 1917.

Diseases of the Heart The Methods for Their Diagnosis Prognosis and Treatment By William D. Reid M.D. F.A.C.P. Assistant Professor of Cardiology Boston University School of Medicine Paper Price 65 cents Pp 105 Boston The Author 1933

This volume presents the author's views on certain phases of diseases of the heart in an informal way designed to be supplementary to larger textbooks on the same subject. It is strictly clinical and covers especially well the general subjects of history taking and physical examination prognosis and treatment in the manner used in bedside teaching without elaborate descriptions of diseases in true textbook style or meaningless case histories. It presupposes an organized knowledge on the part of the reader of the general field and hence is valuable, for the most part, as an aid to the medical student or practitioner, but not as a substitute for some other sources of more systematized knowledge of heart disease. It is strictly sound and conservative throughout and should be of value to any one at all interested who has not already had special training in the field.

Temas oficiales (rapports) sobre el desprendimiento de la retina I Etología y patogenia del desprendimiento de la retina Por Dr. H. Arruga II La cura medica del distacco della retina Da G. Ovio III Die operative therapie der netzhautablösung Von A. Vogt T. II I. IV Concillium Ophthalmologicum 1933 Hispania Paper Various pagination with 147 illustrations Madrid 1933

This is the official report, from the fourteenth International Congress of Ophthalmology held in Madrid last April of the symposium on detachment of the retina, and it represents the summation of present human knowledge of that condition. The report is in three parts. The first part is in Spanish by Arruga of Barcelona and deals with the etiology and pathogenesis of retinal detachment. It covers 191 pages and is profusely and beautifully illustrated with both colored and black and white illustrations, clinical and microscopic. The conclusions cover eight pages and appear in Spanish, German and English and are too extensive to permit of abstract. A bibliography of 330 references in all languages seems to cover the topic. The second part deals with the medical treatment of detachment of the retina and was written by Ovio of Rome. It appears in Italian and has no illustrations. Almost all the different medical methods of treatment are discussed more or less at length.

From the statistics here compiled, an average of about 22 per cent of improvements and cures have been noted. That concluding statement of the abstract which also appears in French, German and English, will scarcely meet the approval of clinicians. Here too is added an extensive bibliography of 290 references. The third part is in German and was written by Vogt of Zurich. The illustrations are few but are excellent. The surgical treatment of detachment of the retina forms the topic of this part and the various methods are discussed at fair length. The multilingual abstract can be boiled down to the statement that the important factor in the operative treatment for detachment of the retina today is the closure of the retinal hole. The bibliography for this part contains only twenty-two references. All three parts contain the details of illustrative cases. All in all everything that is known about detachment of the retina can be found in this volume, which makes it the last word on the subject.

Surgical Anatomy By C. Latimer Callander A.B. M.D. F.A.C.S. Assistant Clinical Professor of Surgery and Topographic Anatomy University of California Medical School With a foreword by Dean Lewis M.D. Sc.D. F.A.C.S. Cloth Price \$12.50 Pp 1115 with 1250 illustrations Philadelphia & London W. B. Saunders Company 1933

While knowledge of general gross anatomy changes but slowly that of surgical anatomy has changed more rapidly as a result of the continued rapid increase in the field of operative surgery in recent years. With the advent of each new operation has come a reconsideration of the regional anatomy. Structures and relationships that were previously of little consequence assume a new importance when a new surgical approach or attack is introduced. From this standpoint Callander's Surgical Anatomy meets an important need. This is particularly true in the fields of neck and thoracic surgery in which recent advances have been rapid. The surgical anatomy of diaphragmatic hernia mediastinal tumors and chronic empyema have been considered in a new light. The technique of phrenic excision, pneumotomy, pneumectomy and operations on the pericardium and heart are given in detail. The illustrations both of the

anatomy and of the operative procedures are extensive and excellent in quality. The sympathetic nervous system has been studied in terms of the newer operative procedures on it. Much of the obsolete has been deleted, particularly with reference to the ligation of vessels and amputations. It is a work of value both to the clinician and to the teacher of anatomy.

The Elements of Medical Treatment By Robert Hutchison M.D. F.R.C.P. Physician to the London Hospital and to the Hospital for Sick Children London Second edition Cloth Temporary price \$1.50 Pp 188 with illustrations Baltimore William Wood & Company 1933

This embodies an annual course of lectures. As the author says it is not a complete treatise on medical treatment but merely a setting out of principles and their application to the commoner forms of disease encountered in practice, special attention being given to the prescription of drugs. Many of these, as well as quite a bit of the material offered, appear somewhat old-fashioned. One gets the impression of a straining at giving general currency to the idea of "team work" in drugs. The author favors four drug prescriptions patterned after the *curare cito tuto, et jucunde* pattern. Unfortunately, the pleasantness part of it is too often sacrificed to the attempt to secure the other aims of this maxim in a more or less doubtful manner. Most of Dr. Hutchison's model prescriptions are indeed far from being pleasant. On the other hand, so much clinical wisdom is contained in this book that even the experienced physician will find it full of practical inspiration.

Klinik und Therapie akuter Vergiftungen Von Dr. Ludwig Popper Assistent der I. medizinischen Abteilung des Allgemeinen Krankenhauses in Wien Mit einem Vorwort von Prof. J. Pal Paper Price 10 marks 1 p 233 Leipzig and Vienna Franz Deuticke 1933

A new epoch in toxicologic literature seems to be developing, in that clinicians are entering the field and writing of their practical experience, with critical discussion of the various therapeutic measures advocated. Such a one is the present book, from the clinic of Professor Pal of Vienna, in whose section for several decades most of the cases of poisoning entering the Wiener Allgemeine Krankenhaus have been treated.

The Motion Picture as a Professional Instrument By William F. Kruse Paper Gratis Pp 28 Chicago Educational Division Bell & Howell Company [n.d.]

This monograph is an answer to frequently repeated requests for information dealing with the production of medical motion pictures on 16 mm film. It is written especially for the amateur and covers all the necessary details concerning the preparation of the "scenario" (i.e., what should be included and what omitted), the kind of lenses focusing lights, filters, supporting the camera, speed editing and titling. There is a discussion of animated motion pictures, the use of sound and cinemicroscopy. Frequent reference is made to the methods employed by different physicians in solving particular problems, and a bibliography is given of some of the more important articles dealing with medical motion pictures.

Urologie des praktischen Arztes Von Hofrat Dr. Felix Schlagintweit Urologe in München Second edition Cloth Price 8.20 marks 1 p 181 with 104 illustrations Munich J. F. Lehman 1933

The author has again succeeded in furnishing a succinct though complete survey of the essentials of modern urology. A valuable feature of this monograph is the minute instruction given for the evaluation of the leading points in diagnosis and aims of therapeutic efforts, how to collect the necessary information and how to administer a purposeful therapy based on the proper recognition of the pathologic condition present.

Diseases of Old Age By E. Martin Lipscomb M.R.C.I. Major Royal Army Medical Corps Cloth Temporary price \$3.50 1 p 472 Baltimore William Wood & Company 1933

This book is little more than a compilation, the source material being largely articles in standard textbooks and systems of medicine. Where the author's experience has been extensive as it apparently has in gout, the chapters are of some merit. In general, however, the practitioner will get little help in the recognition of the diseases discussed or in their treatment. The subjects of diabetes and hyperthyroidism, for example, are handled in a most unsatisfactory manner. Important details are lacking as are many modern ideas. The work will make but a limited appeal to physicians.

Medicolegal

Selection of Examining Physicians in Personal Injury Suits, Examining Physicians as Officers of Court, When Exact Nature of Injury Must be Plead—In an action for damages on account of personal injuries the defendant applied to the court for the appointment of a medical commission to examine the plaintiff. The defendant suggested that one member of the commission be selected by the plaintiff and another by the defendant and that these two select a third member, if they should so desire. The plaintiff objected. The trial court sustained the objection and instead of appointing such a commission as was proposed appointed three disinterested physicians of its own choice. The plaintiff filed a motion to set aside the order appointing these examining physicians; the motion was overruled and the plaintiff noted an exception. Judgment was given in favor of the defendant. The plaintiff appealed to the Kansas City court of appeals. Missouri contending among other things that the appointment of the examining physicians was error.

The law said the court of appeals vests the trial court with authority in its discretion and in the furtherance of justice to appoint physicians to make a physical examination of a plaintiff. The defendant however cannot demand as a matter of right that such an examination be made. When the court makes such an appointment it does so because in its judgment the case calls for the opinions of disinterested and unbiased physicians not for the opinions of friends of either party to the suit whose testimony may be biased. The court cannot compel a plaintiff to submit to an examination by witnesses for either side but physicians appointed by the court in such cases are officers of the court. There was no showing said the court of appeals that the trial court abused its discretion in the appointment of the examining physicians. The trial court refused to admit testimony offered by the plaintiff to show that her spine had been injured on the ground that such evidence was outside the allegations of her petition. Her petition had complained that she had been greatly and permanently injured in her head body and limbs. She contended that, since her body included her spine her complaint of an injury to the body was sufficiently broad to include a specific injury to the spine and the nervous system. But the court of appeals could find no error in the exclusion of the proffered evidence as to the spine. The petition did not charge specifically an injury to the spine nor contain any allegation that would notify the defendant that he would be called on to defend against a charge of such an injury. The fact that the defendant might have been entitled to a more definite statement concerning the plaintiff's injuries if he had by proper motion sought to be informed concerning them was regarded by the court of appeals as without merit.

The judgment of the trial court was affirmed—*Boggs v Gosser (Mo)*, 55 S W (2d) 722

Mandamus Not Available to Compel Readmission to State Medical School—The University of Texas maintains a school of medicine at Galveston under the control and management of the board of regents of the university. The board is authorized by statute to enact such rules as may be necessary for the successful management and government of the university and to regulate the course of instruction and prescribe by and with the advice of the faculty, the books and authorities used in the several departments. Under this authority the board by rule provided that a student who failed to make satisfactory grades in three major subjects or their equivalents or in two major subjects when the general average is less than 70 should be automatically dropped from the roll and should not be readmitted. Foley was admitted to the medical school as a student but at the end of his second year he was dropped because he had failed to attain the required standard of proficiency. He sought by a writ of mandamus to compel the board of regents to reinstate him.

A student who is admitted to the university, said the Commission of Appeals of Texas section A has the privilege of attending that institution subject to reasonable rules promul-

gated by the board of regents, in force at the time of his admission. Unless he attains the standard fixed under authority of law he is not entitled to continue in attendance, if the prescribed standard is not unreasonable nor arbitrary and is such a standard as the average student is able to meet. A rule which refuses readmission to a student who has failed to attain the prescribed standard is not unreasonable when the facilities of the school are inadequate to accommodate all who are eligible for admission. The authority to fix standards is by statute vested in the board of regents and the faculty. If a change in the rules and regulations is desired, it is a matter for consideration by the legislature. The courts will not interfere in the absence of a clear showing that the board has acted arbitrarily or has abused the authority vested in it.

The recommendation of the Commission of Appeals regarding Foley's application for a mandamus to compel his reinstatement in the medical school was adopted by the Supreme Court of Texas and the mandamus was refused—*Foley v Board of Regents*, 35 S W (2d) 80.

Health Insurance "Immediately Disabled" Construed—Under an insurance policy that provided certain benefits if the insured should through accidental means sustain bodily injuries which independently and exclusively of all disease and all other causes immediately continuously and wholly disabled him from the date of the accident the plaintiff, the beneficiary under the policy, sued the defendant insurance company. On April 3 1928 the insured had run a sliver of wood into one of his fingers. He worked at his usual occupation up to and including April 9. On the following day he was treated by a physician and on April 11 he was taken to a hospital suffering from blood poisoning. He died April 18. The insurance company contended that the accidental injury did not immediately continuously and wholly disable the insured from the time of the accident and that consequently the insurer was not liable under the policy. The word "immediately," said the Supreme Court of Kansas, is not synonymous with "instantly," "at once" and "without delay." A disability is "immediate" within the meaning of such an insurance contract as the one under consideration if it follows directly from an accidental hurt within such time as the processes of nature consume in bringing the person affected to a state of total incapacity to prosecute every kind of business pertaining to his occupation. The Supreme Court therefore affirmed the judgment of the trial court in favor of the plaintiff—*Thomas v Mutual Ben Health & Accident Assn (Kan)* 18 P (2d) 151.

Society Proceedings

COMING MEETINGS

- American College of Surgeons Chicago October 9-13 Dr Franklin H. Martin 40 East Erie Street Chicago Director General
- American Public Health Association Indianapolis October 9-12 Dr Kendall Emerson 450 Seventh Avenue New York Acting Executive Secretary
- Associated Anesthetists of the United States and Canada Chicago October 8-12 Dr F. H. McMechin 518 Hotel Westlake Rocky River Ohio Secretary
- Association of American Medical Colleges Minneapolis Oct 30-Nov 1 Dr Fred C. Zapffe 5 South Wabash Avenue Chicago Secretary
- Central Society for Clinical Research Chicago Nov 3 Dr Lawrence D. Thompson 903 University Club Building St. Louis Secretary
- Inter State Postgraduate Medical Association of North America Cleveland Oct 16-20 Dr W. B. Peck 12 1/2 East Stephenson Street, Freeport Ill. Managing Director
- Kansas City Southwest Clinical Society Kansas City Mo October 3-5 Dr Lewis G. Allen 601 Minnesota Avenue Kansas City Kan Secretary
- Mississippi Valley Conference on Tuberculosis Kansas City Mo October 6 Dr E. A. Mejerding 11 West Summit Avenue St. Paul Secretary
- Oregon State Medical Society Portland Oct 26-28 Dr Albert W. Holman 364 Washington Street Portland Secretary
- Pacific Coast Society of Obstetrics and Gynecology Portland Oregon October 19-21 Dr Clarence A. DePuy 230 Grand Avenue Oakland California Secretary
- Pennsylvania Medical Society of the State of Philadelphia October 2-5 Dr Walter F. Donaldson 500 Penn Avenue Pittsburgh Secretary
- Southern Medical Association Richmond Va November 14-17 Mr C. P. Loranz Empire Building Birmingham Ala Secretary
- Vermont State Medical Society Barre October 5-6 Dr W. G. Ricker 31 Main Street St. Johnsbury Secretary
- Virginia Medical Society of Lynchburg Oct 24-26 Miss Agnes V. Edwards 1200 East Clay Street Richmond Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

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Thrombosis of Dural Venous Sinuses in Infancy and in Childhood R K Byers and G M Hass Boston—p 1161
Acute Rheumatism as Familial Disease Edith Irvine Jones St. Louis—p 1184

*Lungs After Treatment of Asphyxia Neonatorum in Drinker Respirator Report of Thirty Necropsies D P Murphy and J T Bauer Philadelphia—p 1196

Standards of Basal Metabolism for Children of Retarded Growth Anne Topper New York—p 1203

Intestine and Urinary Bladder in Poliomyelitis J A Toomey Cleveland—p 1211

*Chemical Allergy and Nirvanol Sickness Preliminary Report B Schick H Sobotka and S Peck New York—p 1216

Constipation of Infancy Rectal Factor H I Kallet Detroit—p 1221

Infants Born of Women Having Toxemia as Complication of Pregnancy G C Ludlow New York—p 1223

Cutaneous Reaction to Tuberculin in Primary Pulmonary Tuberculosis Growth and Variability of Surface Area C A Stewart Minneapolis—p 1229

Blood Cultures in Children with Rheumatic Fever May G Wilson and Helen Edmond New York—p 1237

Lungs After Treatment of Asphyxia Neonatorum—Murphy and Bauer compare the pathologic changes in the lungs of thirty asphyxiated infants, who were given artificial respiration in the Drinker respirator but who died within twenty-four hours after birth, with thirty who had not received this means of artificial respiration. Of these thirty deaths, 70 per cent were the result of either intracranial injury or prematurity. There was no death due to a pulmonary condition. A slight increase in the incidence of pulmonary congestion followed the use of the Drinker respirator and indicated that the treatment had an appreciable effect on the contents of the chest. Artificial respiration had no influence on the kind of cellular elements observed in the air passages but may have drawn amniotic debris from the bronchioles to the alveoli. Otherwise no gross or microscopic changes were recognized in the lungs of the treated infants that had not been seen in the lungs of untreated infants. In no case was any injury done to the respiratory tract by the use of the respirator. When asphyxia is due to atelectasis it is probable that the previously used 10 cm of negative pressure can be raised safely to 15 cm. Furthermore it may be advisable to alternate this higher degree of negative pressure with an equal amount of positive pressure instead of with atmospheric pressure as has been used as a routine measure in the past.

Chemical Allergy and Nirvanol Sickness—Schick and his associates treated twenty-five patients suffering from chorea with the original nirvanol (phenylethylhydantoin), which contains equal parts of the levoform and the dextroform. The daily dose was 0.3 Gm. It was given for from eight to ten days and was discontinued with the appearance of nirvanol sickness. Twenty-one patients showed symptoms of nirvanol sickness and four did not. Of twenty-eight patients some of them having chorea and others epilepsy, twelve were treated with the levoform and sixteen with the dextroform of phenylethylhydantoin. The daily dose of levophenylethylhydantoin was 0.15 Gm. This dose does not correspond in its power to produce sickness to 0.3 Gm of the original nirvanol. Of the twelve patients treated with levophenylethylhydantoin sickness resulted in seven; no symptoms having occurred in five. Sickness developed in five patients treated with dextrophenylethylhydantoin eleven remaining free from symptoms. The authors believe that a beneficial effect is achieved with nirvanol. Children treated with dextrophenylethylhydantoin showed an

improvement in the chorea even without the development of a rash, which indicates that the rash and other symptoms of nirvanol sickness may not be essential for an effective treatment.

American Journal of Medical Sciences, Philadelphia

185 749 896 (June) 1933

Inflammatory Reaction in Tuberculosis E R Long Philadelphia—p 749

*Diagnosis of Early Tuberculosis Value of Monocytic Lymphocyte Index Determined by Supravital Technic Before and After Administration of Tuberculin M Sullivan and P H Jones New Orleans—p 762

Prognostic Value of Blood Culture in Typhoid Fever at Various Periods of the Disease P T Jantun Manila P I—p 768

Double Bacteremia (Streptococcus Viridans and Staphylococcus Aureus) Diagnosed Before Death J C Doane and H B Cates Philadelphia—p 772

Effect of Chlorinated Swimming Pool Water on Fungi of Toe Ringworm Note Dorothy Spring Philadelphia—p 775

Dental Infection and Systemic Disease Review of Literature and Study of Eight Hundred and Eighty Three College Students Including Complete Dental Roentgen Ray Examination J H Arnett and L M Ennis Philadelphia—p 777

Transfusion Syphilis C L Cummer Cleveland—p 787

Observations Regarding Kidney Function Tests in Acute Nephritis C Holten Copenhagen Denmark—p 789

*Ketogenic Diet in Normal Individuals Biochemical Investigation F L Apperly and Joan H Norris Richmond Va—p 802

Colon Changes in Chronic Arthritis Compared with Other Chronic Diseases H H Haft Syracuse N Y—p 811

Insulin Resistance Due to Allergy Report of Case T A Allen and L R Scherer Rochester Minn—p 815

Allergic Migraine II Analysis of a Follow Up After Five Years W T Vaughan Richmond Va—p 821

Comparative Actions of Symptomatic Compounds Circulatory and Local Actions of Optical Isomers of Metylnephren and Possible Therapeutic Applications M I Tainter and A B Stockton San Francisco—p 832

Blood Pressure in Lucateans G M Saunders Kingston Jamaica British West Indies—p 843

Diagnostic Importance of Biliary Crystals H A Rafsky New York—p 851

Diagnosis of Early Tuberculosis—Sullivan and Jones demonstrate that the monocyte plays an important part in tuberculosis. An increase in the number of monocytes of the circulating blood is indicative of activity. A study by the Sabin technic of the number of monocytes and the relative proportion of monocytes to that of lymphocytes that is the monocyte-lymphocyte ratio often proves of invaluable assistance in diagnosis. In active tuberculosis the monocytes are markedly increased and there is a reversal of the monocyte-lymphocyte index. In arrested tuberculosis there is an increase in the lymphocytes with the total number of monocytes increased but less in number than the total lymphocytes. There is a storehouse for monocytes in the tuberculous patient, which does not exist in the normal nontuberculous subject. If the total number of monocytes and the monocyte lymphocyte ratio is determined before and after the administration of tuberculin subcutaneously, the blood of patients in which a definite focal reaction is obtained will show a marked increase in monocytes and a shift in the monocyte-lymphocyte ratio. This simultaneous provocation of focal reaction and increase in circulating monocytes is strong evidence of the presence of tuberculosis.

Ketogenic Diet in Normal Persons—Apperly and Norris studied the blood changes produced by the ketogenic diet in three normal subjects. They observed that alkalemia was almost constantly present accompanied by a fall in the carbon dioxide of the plasma and the red cells. They suggest that the alkalemia is the result of hyperpnea produced by direct stimulation of the respiratory center by certain ketone derivatives in the blood that in their experiments this effect outweighed any acidemia produced by ketonic acids and that the failure of the ketogenic treatment of many cases of epilepsy and asthma is due to the relative preponderance of the former effect. They believe that a study of any of the conditions tending to raise the ketonic acid ketone ratio would be of benefit in the treatment of epilepsy and asthma.

American Journal of Physical Therapy, Chicago

10 1 of (May) 1933

Role of Manipulation in Therapeutics J Mennell London England—p 5

Air Therapy W T Johnson El Paso Ill—p 11

Massage in Orthopedic Work I Jone Liverpool England—p 13

Observation of Hemorrhoids with Infrared Rays W J Perry Chicago—p 26

American Journal of Psychiatry, Baltimore

12 1125 1383 (May) 1933

- Bromide Delirium and Other Bromide Psychoses M Levin, Harrisburg Pa—p 1125
- Interrelations Between Psychoanalysis and Experimental Work of Pavlov T M French Chicago—p 1165
- Nature of Feeble-mindedness A Myerson Boston—p 1205
- Blood Cholesterol Studies in Mental Disease II Schizophrenia P G Schube Hartford Conn—p 1227
- Schizophrenia in Children H W Potter New York—p 1253
- Changes in Clinical Signs and Laboratory Findings in Various Types of Psychoses Under Influence of Subcutaneous Administration of Oxygen J Notkin J G W Greeff F H Pike and J A Kilham New York—p 1271
- Sociability of Abnormal Children and Social Child Psychology (Sociability as Mental Test of Child Groups) Investigations at the Children's Hospital Randall's Island N Y (Preliminary Record) I Schneersohn New York—p 1307
- A Note on Admissions to State Institutions H Adler Berkeley Calif—p 1339

Am J Roentgenol & Rad Therapy, Springfield, Ill

20 585 728 (May) 1933

- Roentgen Diagnosis of Right Paraduodenal Hernia Report of Case with Survey of Literature F B Exner Minneapolis—p 585
- Physiologic Variations in Contour of Diaphragm Simulating Organic Disease H A Singer and W S Boikun Chicago—p 600
- Pulmonary Changes in a Case of Periarthritis Nodosa W G Herrman Asbury Park N J—p 607
- Posttraumatic Cystic Disease of Carpal Bones I A Malone Terre Haute, Ind—p 612
- Tuberculosis of Diaphysis R S Bromer, Bryn Mawr Pa and E E Downs Woodbury N J—p 617
- Actinomycosis of Spine J L Tabb and J T Tucker Richmond Va—p 628
- Ivory Vertebra H C Ochsner and R H Moser Indianapolis—p 635
- Trichobezoar H D Kerr and E L Rybins, Iowa City—p 638
- Chronic Radium Poisoning in Rats H E Thomas and F H Bruner Columbia Mo—p 641
- Skin Erythema Dose in Terms of Roentgens in Superficial Therapy G C Andrews and C B Braestrup New York—p 663
- Analgesic Effect of Roentgen Rays in Metastasis from Carcinoma of Prostate Gland E T Leddy and C Gianturco Rochester Minn—p 667
- Francis Hawksbee Did He in 1709 See His Hand Through Sealing Wax and Pitch? (With a Repetition of the Experiments) A W Crane Kalamazoo Mich—p 671

Posttraumatic Cystic Disease of Carpal Bones—From a study of five cases of posttraumatic cystic disease of the carpal bones and the literature, Malone concludes that the conditions as described by Preiser and Kienbock are not separate clinical entities. A standard diagnostic name should be adopted, the most inclusive one up to the present time being 'posttraumatic cystic disease of the carpal bones'. The disease is much more common than the literature indicates. The arthritic element as a factor in the production of pain must not be overlooked in these cases. The term osteitis should not be used in connection with this condition, at least not without qualification. The treatment is not satisfactory and depends on the stage of progress when discovered. Conservative treatment in the early stages, in the form of rest, heat and massage, leads to a good result or at least a useful wrist in about half of the cases. The experience of nearly all writers has been that, when the fracture is followed by pseudarthrosis and cystic degeneration or fracture follows the cystic change, union rarely, if ever, takes place. In these cases the only treatment is either partial or total extirpation. The results from operation do not give an absolute restoration of function. Müller reports complete recovery in a case in which he did an evacuation of calcium and bony debris with preservation of the actual bone shell.

Tuberculosis of Diaphysis—Bromer and Downs report the history of a white man, aged 76 who was suffering from a destructive tuberculous lesion in the shaft of the fibula. The roentgenographic appearance of the lesion showed no characteristics comparable to any of the various types of lesions previously described. In the literature, only one type of lesion that resembles the appearance of the authors' case is reported. Caan, in describing tuberculous lesions solely affecting the diaphysis, describes the central and peripheral types. The case of the authors seems to resemble Caan's second type. The lesion was definitely superficial. A tumefaction was present. An additional focus soon developed in the humerus. No other tuberculous foci were found on the first examination. In many respects, this case is similar to the description of Caan's second type.

Actinomycosis of Spine—The descriptions of previous writers and the observations in their case lead Tabb and Tucker to believe that the roentgen observations in actinomycosis of the spine are as follows: 1 This disease usually attacks two or more vertebrae. It produces rarefied areas which are sharply defined, and apparently normal bone texture may be adjacent to and between these rarefied areas. 2 It involves the bodies, pedicles, laminae and the different processes of the vertebrae, also the adjacent ribs apparently without any predilection for the bodies, which contrasts strongly with tuberculosis, in which the vertebral body bears the brunt of the attack. 3 The intervertebral spaces show little if any narrowing, and a marked destruction of the vertebral body or bodies may take place without any collapse or kyphosis. The opposite is usually the case in tuberculosis. 4 Large perivertebral abscesses form rather early and are a constant finding. The organism can be found when a sinus has formed. 5 Sequelae of infection has not been encountered. 6 There is usually lung infection when the spine is involved. Roentgen examination of the lungs will show the involvement and the organism may be detected in the sputum. Potassium iodide has been reported to be specific in lung and appendiceal cases. Surgery is valuable when the part involved is of an operable nature. Wide excision and curettage have been reported successful. Local injections of phenol in strong solutions, or even application of crystals, is advocated by some. Roentgen rays and radium have been used in conjunction with potassium iodide therapy, but with little noticeable effect, as all the cases so extensively involved terminated fatally. Vaccines have been advocated but none are available. Mechanical support is indicated. The authors are giving their patient 125 drops of saturated solution of potassium iodide three times a day by mouth. He also receives an intravenous injection of potassium iodide once daily. A modified Taylor back brace is being worn and he is receiving a series of high voltage roentgen treatments to the spine. There seems to be some improvement.

American Journal of Surgery, New York

20 515 844 (June) 1933

- Wounds of Heart and Discussion of Causes of Death A O Singleton Galveston Texas—p 515
- Treatment of Fractures of Shaft of Femur G A Hendon, Louisville Ky—p 542
- Surgical Fusion of Tuberculous Hips in Children O L Miller Charlotte N C—p 555
- Osteogenic Sarcoma Report of Cases W C Campbell Memphis Tenn—p 575
- Effect of Roentgen Rays on Bone Growth and Bone Regeneration Experimental Study B Brooks and H T Hillstrom Nashville Tenn—p 599
- Palliation in Advanced Mammary Carcinoma W P Nicolson Jr Atlanta Ga—p 615
- Recurrent Ectopic Pregnancy A P Jones Roanoke Va—p 633
- Chorio Epithelioma of the Uterus W T Black Memphis Tenn—p 638
- Some Phases of Hysterectomy F W Griffith Asheville N C—p 655
- Acute Suppurative Cholangitis F K Boland Atlanta Ga—p 666
- Abscess of Liver Chronic Form Reports of Three Cases K H Ayresworth Waco Texas—p 672
- Abscess of Liver H B Gessner New Orleans—p 683
- Meniere's Disease Diagnosis and Treatment Report of Thirty Cases W E Drury Baltimore—p 693
- Surgical Treatment of Trigeminal Neuralgia A S Taylor Clifton Springs N Y—p 699
- Chronic Primary Tuberculosis of Spleen Roentgen Ray Diagnosis Case Reports H R Shands Jackson Miss—p 707
- Hemolytic Jaundice Report of Five Splenectomies in One Family W D Wise Baltimore—p 722
- End Results with Selective Collapse Therapy in Pulmonary Tuberculosis F S Johns Richmond Va—p 737
- Preventive Surgery C H Mayo Rochester Minn—p 747
- Arachnidism L Noland Birmingham Ala—p 758
- Acute Extradural Abscess with Compression of Cord G H Bunch and E Madden Columbia S C—p 763
- Analysis of Complications and Deaths Occurring in Appendicitis J M T Finney Jr Baltimore—p 772
- Malaria and Surgical Diseases R L Rhoads Augusta Ga—p 800

Choriomas of the Uterus—Black states that a uterine hemorrhage or a blood tinged discharge following pregnancy (especially a hydatidiform mole) with a positive Aschheim Zondek test should arouse suspicion of a chorioma. While 457 per cent of choriomas follow moles only about 1 per cent of moles are followed by chorioma therefore a hysterectomy or large doses of radium are not justifiable in young women with moles. The diagnosis of typical cases of choriocarcinoma from the histologic observations and clinical symptoms should

not be difficult. When a diagnosis is made, a panhysterectomy should be performed, followed by irradiation. As embryonic cells are sensitive to radium rays, radium is a good prophylactic and curative agent in chorioma in selected cases. Repeated Aschheim-Zondek tests following moles and especially following hysterectomy for chorioma are of paramount prognostic importance. Patients with mole pregnancies should be watched for several months. However if an Aschheim-Zondek test is negative, one may feel reasonably assured of no further trouble.

American Review of Tuberculosis, New York

27 529 632 (June) 1933

- Preventive and Therapeutic Measures in Tuberculosis Since Koch. Brief Critical Review. E. Mayer. Saranac Lake, N. Y.—p. 529.
- *Spontaneous Pneumothorax with Aortic Aneurysm and Pulmonary Fibrosis. C. H. Ketterer. Pittsburgh—p. 553.
- Studies on Pathogenesis of Primary Tuberculous Infection. I. Regressive Lesions. H. C. Sweany. Chicago—p. 559.
- Id. II. Tendencies in Adult Primary Tuberculous Infection. H. C. Sweany. Chicago—p. 575.
- Study of Tuberculous Infection by Way of Female Genital Tract. Supplementary Report. E. M. Jameson. Saranac Lake, N. Y.—p. 589.
- Production of Tuberculous Tissue and Hypersensitiveness to Tuberculin in Guinea Pigs. C. H. Boissevain. Colorado Springs, Colo.—p. 593.
- Study of So-Called Skin Lesions of Tuberculin Reacting Cattle. L. L. Daines and H. Austin. Salt Lake City—p. 600.
- Tuberculosis Dispensary Practice in New Haven, Connecticut. H. R. Edwards. New Haven, Conn.—p. 611.

Pneumothorax with Aortic Aneurysm and Pulmonary Fibrosis—Ketterer reports a case of spontaneous pneumothorax with aortic aneurysm and pulmonary fibrosis in which the roentgen observations of pulmonary tuberculosis were ruled out clinically and by laboratory tests. The history, together with the roentgen observations of the aneurysm, indicated syphilis. The therapeutic test failed to have any appreciable effect on the pulmonary fibrosis after five months of anti-syphilitic treatment. The fibrosis may have been of syphilitic origin. The history of prolonged exposure to coal dust, together with the fact that pneumothorax is a rather frequent accident in these cases and with the other etiologic factors eliminated led the author to believe that the aneurysm was incidental and that the pneumothorax was caused by the pneumoconiosis.

Archives of Dermatology and Syphilology, Chicago

27 901 1058 (June) 1933

- *Pulmonary Embolism from Arsenicals Injected Intravenously. Method Suggested for Prevention. G. C. Shivers. Colorado Springs, Colo.—p. 901.
- Asymptomatic Syphilis. Effect of Various Drugs on *Spirochaeta pallida* in Brains of Rabbits and Mice. G. W. Raiziss and Marie Severac. Philadelphia—p. 923.
- Psoriasisform Eruption with Pustular Exacerbations. M. H. Ebert. Chicago—p. 933.
- Dermatitis from Oxygenaire. Report of Case. T. Gandy. Houston, Texas—p. 951.
- *Influence of Grenz Rays on Pathogenic Fungi in Skin Material. E. Muskatblit and B. Ouspensky. New York—p. 953.
- *Some Nonspecific Dermatoses. Their Responses to Spleen Extract. T. Cornbleet. Chicago—p. 956.
- *Use of Extract of Spleen in Certain Dermatoses. M. S. Wien and Minnie Oboler. Perlestein. Chicago—p. 963.
- Fatality After Intramuscular Injection of Bismuth in a Man Sensitive to Arsenobenzene. J. F. Schamberg and C. S. Wright. Philadelphia—p. 969.
- Treatment of Spider Nevus. D. W. Montgomery. San Francisco—p. 971.
- Trichophytid of the Hands. C. M. Williams. New York—p. 973.
- Toilet Seat Dermatitis Produced by a Red Stain. Possibility of a Sudan Stain as Causative Factor. C. L. Cummer. Cleveland—p. 976.

Pulmonary Embolism from Arsenicals—Shivers reports a case in which death resulted from an injection of neoarsphenamine and gives a summary of forty-seven cases of accidents from arsenical drugs and a case of death from salyrgan reported in the literature. A large part of the deaths are due to pulmonary embolism resulting from a combination of the drugs with the plasma proteins. An acid reaction of the drug as indicated by a pH value below 7, appears to be the cause of the precipitation of the drug in the blood. If the pH of the drugs is below 7, neoarsphenamine, ar-sphenamine, and salyrgan will precipitate in dog's serum in vitro. If the pH of the drugs is below 7, neoarsphenamine, ar-sphenamine, and salyrgan will precipitate in rabbit's serum in vivo causing pulmonary embolism. The author outlines a method whereby the combination of bromthymol blue with the drugs in ampules will enable the physician to determine at the time of injection whether the drug is suitable for administration.

Bromthymol blue has a pH range from 6 to 7.8 and is yellow on the acid side and blue on the alkaline side. It was found to have a sharp end-point at pH 7 when combined with neoarsphenamine in which case it gives a green solution if alkaline and a yellow solution if acid. The amount of dye which must be combined with the drug to give a satisfactory color is 0.8 mg. per ampule of drug. When an accident does occur the patient should be treated for shock, with lowered head, heat and morphine, if the pain is severe. Epinephrine hydrochloride in a dose of 5 minims (0.3 cc.) of a 1:1,000 dilution should be administered intravenously followed by an intramuscular injection of 1 cc. of the same dilution. Sodium thiosulphate in 15 grain (1 Gm.) intravenous doses has a marked action in decreasing the toxicity of drug emboli and in hastening their absorption. The patient should receive one dose of thiosulphate intravenously at once, and this should be repeated daily until no signs of reaction remain. If embolic pneumonia occurs, symptomatic treatment, counterirritation and the administration of sodium thiosulphate and of oxygen seem to be the only methods that are of value. Statistics indicate that in 20 per cent of the cases of accidents the patients may recover.

Influence of Borderline Rays on Pathogenic Fungi—Muskatblit and Ouspensky made twenty-two experiments with five different species of fungi taken from seventeen patients. Doses up to 50,000 roentgens did not influence these fungi. *Microsporon lanosum*, *Microsporon audouinii*, *Trichophyton crateriforme* and *Achorion Schonleini*. The results with *Trichophyton violaceum* were different. The doses up to 30,000 roentgens had no effect. However, 50,000 roentgens in two experiments completely inhibited the growth, the exposed hairs remained sterile, while the control material gave numerous cultures. In the third experiment with the same species only temporary inhibition was observed. Cultures from the exposed material started to grow later, they were at first smaller than the controls and only three months after planting reached the same size and development as the latter. Fungous cultures which grew from the hairs irradiated by borderline rays did not show any peculiarities in their gross or microscopic morphology.

Nonspecific Dermatoses—From a study of two patients with dermatitis herpetiformis and four with eczema who were subjected to eighteen observations made over a period of from one to three months, before and during spleen extract therapy, Cornbleet concludes that in dermatitis herpetiformis clinical improvement was associated with (1) increased capillary permeability, (2) an increase in the carbon dioxide content and pH of the blood, (3) a decrease in the potassium/calcium ratio, (4) an increase in inorganic serum phosphorus, and (5) a decrease in blood cholesterol. In chronic eczema the only correlation noticed was a shortening of the blister time, which indicates increased arteriolar sympathetic tone. Injections of spleen extract cause a decrease in the eosinophil count which lasts for about three days. This change in the number of eosinophils cannot be correlated with clinical changes. Previous injections of spleen extract decrease the inflammatory response of a positive patch test. There are no histologic changes in a dermatitis from the use of spleen extract. At times spleen extracts are of distinct but limited value in eczema and other nonspecific dermatoses.

Extract of Spleen in Dermatoses—The clinical experience of Wien and Perlestein with a purified aqueous extract of hog spleen indicate that it is of distinct value in urticaria, dermatitis herpetiformis and secondary toxic exfoliative dermatitis. Spleen extract has limited usefulness in the temporary alleviation of certain phases of the subjective sensations in eczema. It tends to decrease the pruritus and to shorten the period of acuity. It is of value as an adjunct to local therapy in resistant cases of dermatitis or as stated by Gate and Charpy it is an addition to be used in stubborn disorders especially for the relief of itching. However treatment must be prolonged with a series of injections approximating 10 Gm. of spleen substance being given at each injection over a period of time varying with the individual case. The more concentrated solution has the advantage of less fluid volume in each injection but the disadvantage of more local pain and reaction. The spleen extract is relatively nontoxic. However the authors were unable to substantiate Paul's finding of instantaneous cure by the use of spleen extract.

Archives of Ophthalmology, Chicago

9 893 1030 (June) 1933

- Retrobulbar Neuritis and Disease of Nasal Accessory Sinuses W L Benedict Rochester Minn—p 893
- Intracapsular Cataract Extractions by the Knapp Method Report on One Hundred Cases L F Appleman Philadelphia—p 907
- Atropine Contraindicated Both Before and After Iridencleisis for Glaucoma S Holth Oslo Norway—p 913
- The New Wills Hospital J M Griscom Philadelphia—p 915
- What Is Wrong with the Application of the Theory of Focal Infection? O R Lourie Boston—p 918
- Interpretation of Refractive Conditions in the Peripheral Field of Vision Further Study C E Terree and G Rand Baltimore—p 925
- Effect of Stimulation of Posterior Longitudinal Tarsculus on Ocular Muscles N P Scafr Washington D C and E A Spiegel Philadelphia—p 939
- Retinitis Juxtapapillaris Report of Case L W Statu Pittsburgh—p 947
- Stereoscopic Exercises in Ametropia New Use of Stereoscope for Developing Tolerance to Lenses Correcting Errors of Refraction J I Pascal Boston—p 952
- Partial Cortical Blindness with Preservation of Color Vision Report of Case Following Asphyxia (Carbon Monoxide Poisoning?) A Consideration of the Question of Color Vision and Its Cortical Localization I S Wechsler New York—p 957
- *Cataract and Diabetes Study I D B Kirby New York—p 966

Cataract and Diabetes—Kirby examined eighty-eight diabetic patients under treatment to correlate the ocular observations with the general condition. Opacities of the lens were found in 64 per cent of this group. Of these 70 per cent had the opacities in the senile cortex. The severity of the diabetes did not influence the incidence of the opacities. The duration of the disease had a bearing, as the greatest proportion of cases in which opacities were present was found in the patients in whom the disease had existed for more than five years. Opacities of the lens were found in 70 per cent of the diabetic patients who showed in addition a recognized condition of general vascular hypertension. It was found that arteriosclerosis both general and local in the eye is an important complication or coincidence in diabetes, and that many of the ocular lesions could be ascribed to the vascular disease rather than to the diabetes. Retinal lesions in the form of hemorrhages exudates or edema or changes secondary to these were found in 40 per cent of the diabetic patients under treatment whose lenses were clear, while such lesions were found in 53 per cent of those with incipient cataract. A greater proportion of diabetic patients with incipient cataract than of those with clear lenses have retinal lesions, although such lesions do not necessarily accompany the formation of cataract. However, the greater number of diabetic patients with advanced cataract have suffered from retinal lesions.

Archives of Otolaryngology, Chicago

17 625 740 (May) 1933

- Zygomatic Infections as Factor in Otic Complications II Rosenwasser and J G Druss New York—p 625
- Cavernous Sinus Thrombosis Following Submucous Resection N D Fabricant Chicago—p 635
- Problem of Meningeal Infection from Petrositis Report of Cases L J Lawson Evanston Ill—p 640
- Cartilage and Ivory Indications and Contraindications for Their Use as Nasal Support J W Malinak New York—p 649
- Effects of Radiation on Allergic Nasal Mucosa Further Report L B Bernheimer and M Cutler Chicago—p 658
- Procaine Crystals as a Local Anesthetic for Intranasal Surgery N W Sisson New York—p 670
- *Abscess of Brain Following Mild Transitory Otitis Media C B Faunce Boston and G E Shambaugh Jr Chicago—p 673
- *Electric Thermoscope as an Aid in Diagnosis of Acute Mastoiditis Preliminary Report J Daley New York—p 679
- Effect of Destruction of One Labyrinth on Reactions to Rotation E L Ross and A Olsen Chicago—p 684

Abscess of Brain Following Otitis Media—Faunce and Shambaugh are inclined to believe that the incidence of abscess of the brain following mild transitory otitis media is greater than is generally appreciated. The history of otitis media is disregarded or not obtained and the patient dies before a diagnosis is made or necropsy reveals an abscess of the brain in the presence of normal temporal bones. The final diagnosis being abscess of the brain of unknown origin. The fact that the authors observed three such cases in the course of three months half the total number of abscesses seen in this period would indicate that the condition is probably not rare. Any case in which vague or definite signs of intracranial disease develop and in which a history of antecedent otitis media can be obtained should be considered a possible case of abscess of the brain.

Electric Thermoscope in Diagnosis of Mastoiditis—

Daley observed that, in acute infections of the middle ear when mastoiditis is suspected, the thermoscopic reading as compared with that of the normal tympanum varied from plus 0.5 to plus 2 C. In using a normal drum as a means of comparison, the hot point is placed in the normal ear and the testing point is placed in the involved ear. In the event that both ears are involved, the author uses the mouth as his standard of comparison, the hot point is then placed in the mouth and the testing point is inserted in the ear that is to be tested. Under these circumstances the reading varies from 0 to plus 1.5 C. If repeated tests show a continued or persistent plus reading the infection is not resolving and the mastoid bone is undergoing pathologic changes. On the other hand, if such readings of the instrument indicate that the differential temperature is dropping and becoming equalized, one may be sure that the infection of the ear is resolving.

17 741 844 (June) 1933

- Contact Ulcer of Larynx Pathologic Observations A Peroni Milan Italy—p 741
- Mechanism Involving Foreign Bodies in the Postericoid Narrowing with Especial Reference to Sharp Bodies Such as Open Safety Pins L Z Fishman Chicago—p 747
- Dermoid Cyst of Nasal Dorsum R A Luongo Philadelphia—p 753
- *Experimental Surgery of Nose and Sinuses III Results Following Partial and Complete Removal of Lining Mucous Membrane from Frontal Sinus of the Dog A Hilding Duluth Minn—p 760
- Immediate Transplantation on Defects Due to Accident Report of Two Cases G Aufrecht New York—p 769
- Effect of Extract of Suprarenal Cortex on Maxillary Sinusitis in Rabbit W F Wenner St Louis—p 774
- Nasal Secretions Value of Cytologic Examination to the Rhinologist J R Lindsay and T E Walsh Chicago—p 783
- Lateral Head Low Position for Nasal and Sinus Treatment S V Parkinson Oakland Calif—p 787

Removal of Lining Mucous Membrane from Frontal Sinus—The experiments of Hilding brought out that when the normal frontal sinus of the dog is denuded of mucous membrane and the scalp is sutured over it without drainage, the sinus usually fills with scar tissue that obliterates the cavity. In exceptional cases there is partial restitution of the sinus with regeneration of the lining epithelium. Under some circumstances a smaller cavity forms, the walls of which are composed of thick white connective tissue, devoid of epithelial covering and over which epithelium apparently cannot grow. This connective tissue shows no sign of inflammation even if exposed to air. Under other conditions, epithelium will grow over this heavy scar tissue. In some instances it appears to lie directly on the scar tissue and in other instances it lies on vascular submucosal tissue. If portions of epithelium are left within the sinus cysts filled with mucin form within the obliterating scar.

Arch of Physical Therapy, X-Ray, Radium, Chicago

14 263 318 (May) 1933

- Electrocardiogram in Clinical Diagnosis L H Sigler Brooklyn—p 263
- Electrocardiography in Cardiac Diagnosis R F Baskett Texarkana Texas—p 266
- Electrocardiographic Control of Diathermy in Angina Pectoris and Coronary Artery Disease A S Hyman New York—p 270
- Artificial Fever Therapy W H Schmidt Philadelphia—p 281
- Traumatic Synovitis N E Titus New York—p 285
- Electrosurgical Enucleation of Tonsils J Braun New York—p 286
- The Four Gram Radium Element Pack Some Possibilities by External Irradiation B F Schreiner W H Wehr and M C Reinhard Buffalo—p 293
- Abortive Treatment of Threatened Colon Malignancy F H Morse Boston—p 301

Diathermy in Angina Pectoris—Hyman applied diathermic currents to the heart in a series of eighty-seven patients presenting symptoms of chronic coronary thrombosis whose electrocardiograms showed electrodynamic deviations of the terminal ventricular complex usually associated with this condition. In the majority of instances, symptomatic relief was obtained even when standard methods of drug therapy had failed to produce any lasting benefit. Simultaneously with the clinical improvement in the patient there has been a change in the electrocardiograms: the previous negativity of the T waves is first lessened and then a normal positive deflection is obtained. The apparent explanation of the return to a normal electrodynamic status of the heart lies in the fact that exposure to diathermic current increases blood flow to an impoverished myocardium and that with a disappearance of the partial

anoxemia, the myocardium tends to return to its former normal physiologic mechanism. The records indicate that no patient has been treated earlier than six months or longer following the last seizure. The author is of the opinion that diathermic therapy will do more harm than good in the acute and subacute stages of coronary disease and that there is more or less hazard to be anticipated in actively exposing such hearts to the diathermic current. He knows of one fatal instance in which diathermy was used on the sixth day of a coronary attack. In the subacute stage of myocardial infarction when a negative T wave has already developed in one or both of the significant leads, exposure of the heart to diathermy may increase the amplitude and negative activity of the T wave. The author saw four such instances in patients who were subjected to too early diathermic treatment.

California and Western Medicine, San Francisco

38 409 480 (June) 1933

- Living Grafts of Endocrine Glands H B Stone J C Owings and G O Gey Baltimore —p 409
Prostatic Obstruction Development of Its Surgical Treatment H C Bumpus Jr Rochester Minn —p 411
Acute Abdominal Pain P M Ellwood Oakland —p 415
State Medical Library of California Survey of First Year's Work C D Lerke San Francisco —p 421
Reforestation Camps and Medical Opportunity E L Munson San Francisco —p 422
Spinal Curvatures Visceral Disturbances in Relation Thereto N T Ussher Santa Barbara —p 423
Pernicious Anemia Maintenance Dose of Liver Extract Necessary H Gibbons III San Francisco —p 428

Delaware State Medical Journal, Wilmington

5 107 128 (May) 1933

- Treatment of Uterine Tumors by Irradiation G E Pfahler Philadelphia —p 107
Roentgen Ray Diagnosis of Early Mitral Disease B M Allen Wilmington —p 113

Florida Medical Association Journal, Jacksonville

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- Significance of Symptoms and Signs in Lobar Pneumonia J H Bickerstaff Pensacola —p 525
Syphilis of Stomach M Dobrin Miami —p 527
Convulsive Syndrome and Dehydration C G Blitch Fort McPherson Ga —p 530
Practitioner's Part in Diphtheria Control F A Brink Jacksonville —p 535
Acute Otitis Media W B Jordan Ocala —p 537

Journal of Experimental Medicine, New York

57 881 1024 (June 1) 1933

- Effects of Blood Loss and Blood Destruction on Erythroid Cells in Bone Marrow of Rabbits B F Steele Indianapolis —p 881
Hypophyseal Substance Giving Increased Gonadotropic Effects When Combined with Prolan H M Evans and Miriam E Simpson Berkeley Calif and P R Austin New York —p 897
Reaction of Standard Breeds of Rabbits to Experimental Syphilis P D Rosahn New York —p 907
Modification of Pathogenicity of Pseudorabies Virus by Animal Passage R E Shope Princeton N J —p 925
*Localizations of Virus of Poliomyelitis in Central Nervous System During Preparalytic Period After Intranasal Instillation H K Faber and L P Gebhardt San Francisco —p 933
*Observations on Immunologic Relation of Poliomyelitis to Louping Ill F F Schwenker T M Rivers and M H Finkelstein New York —p 955
Oxycephaly and Allied Conditions in Man and in Rabbit H S A Creene New York —p 967
Studies on Inflammation IX Factor in Mechanism of Invasiveness by Pathogenic Bacteria A Wenkin Boston —p 977
Experimental Granulopenia Due to Bacterial Toxins Elaborated in Vivo E W Dennis Beirut Syria —p 993

Localizations of Poliomyelitis Virus—The experiments of Faber and Gebhardt indicate that about four days after intranasal instillation the virus of poliomyelitis establishes its initial focus within the central nervous system in the olfactory bulbs. From this initial focus the virus spreads (on the fifth and sixth days) through the olfactory tracts and their connections in the brain stem. A secondary focus in the hypothalamus is first established. From this two main channels can be discerned: first to the medulla; second to the thalamus and midbrain. On the seventh day the virus can first be detected in the spinal cord. It is widespread but is found in larger amounts in the cervical than in the lumbar segments. It is present in both the anterior and posterior horns (either in equal amounts or in slightly larger amounts in the posterior). It is also present

in the intervertebral ganglions. The authors surmise that the main route of infection of the cord is not from the medulla but along the sensory tracts presumably from the thalamus. Certain portions of the central nervous system were never found to contain demonstrable quantities of virus; these were the cortex of the frontal and parietal lobes and the cerebellum. The olfactory cortex was only once found to contain virus; this occurred on the seventh day and in small amounts and presumably had its source in the olfactory bulbs. The experiments of the seventh day suggest that the virus had died out in areas previously infected (in the hypothalamus and thalamus particularly) while continuing, apparently undiminished, in the midbrain and medulla and spreading to the cord. These observations are in harmony with the general contentions of Fairbrother and Hurst that virus is better adapted to survival in the lower portions of the cerebrospinal axis than in the higher. The authors conclude that both the experimental disease and the disease as it occurs in man appear to present the features of an infection spread through nervous tissue only. It is unnecessary to assume that at any stage of its progress during the incubation period or later, systemic or general extraneuronal infection is present.

Relation of Poliomyelitis to Louping Ill—The results of the work of Schwenker and his associates show that louping ill and poliomyelitis immunologically are not closely related. Although relatively few experiments were performed, the data obtained were sufficiently decisive. Certainly nothing was found to indicate that one might be able to immunize human beings against poliomyelitis by the use of louping ill virus. In addition to the negative observations, a certain amount of useful information was also secured, namely, (1) monkeys can be solidly immunized against louping ill by intraperitoneal injections of virus and partially protected by intramuscular administration of the active agent, (2) during the process of immunization no signs of involvement of the central nervous system are manifested, and (3) serums from monkeys immunized by intraperitoneal injection contain antibodies capable of neutralizing the virus.

Journal of General Physiology, Baltimore

16 733 858 (May 20) 1933 Partial Index

- Attempt at Peptic Synthesis of Insulin A M Fisher and D A Scott Toronto Canada —p 741
Digestion and Inactivation of Maltase by Trypsin and Specificity of Maltases H Trauber and I S Kleiner New York —p 767
Rate of Oxygen Utilization by Yeast as Related to Temperature T J B Stier Cambridge Mass —p 815

Journal of Immunology, Baltimore

24 349 432 (May) 1933

- Chemical and Immunologic Studies of Pneumococcus III Cellular Carbohydrate Fractions A Wadsworth and Rachel Brown Albany N Y —p 349
Serum Sickness in Rabbits IV Influence of Various Serums on Occurrence of Serum Sickness M S Fleisher and J Jones St Louis —p 369
Id A Immediate and Accelerated Reactions M S Fleisher and L Jones St Louis —p 381
*Use of Rabbits in Standardization of Antiserums Against Streptococcus Hemolyticus from Scarlet Fever and Typhoid Bette S Kolchin assisted by Frances B Vladimir Rebecca Shapiro and Irene Lick New York —p 397
Studies in Tobacco Hypersensitivity II Thrombo Angitis Obliterans with Positive Loricaral Skin Reactions and Negative Reagin Findings Marion B Sulzberger and E Feit New York —p 425

Standardization of Antiserums—Kolchin presents facts corroborating the observations of Frazer and Plummer on the use of rabbits for titration of antitoxic serums of hemolytic streptococci. This titration is done on the basis of the principle applied to titration of antiscarlatinal serums on children. Full grown white rabbits with thick skin and preferably heavier than from 2400 to 2500 Gm were used for titrations of serums with at least the same success as the chinchilla rabbits. The variation in the degree of rabbit skin susceptibility as expressed in the number of skin test doses evoking a reaction not less than 10 by 10 mm is similar to the same variation on human and goat skin. The incidence of rabbits giving a positive reaction to from 1 to 5 skin toxin doses (human) of a sterile toxin is about 40 to 60 per cent. A skin reaction produced by an intradermal injection on the ventral side of the ear as described by Velde was utilized by the author as a preliminary test for selection of susceptible rabbits. The test does most suitable in neutralization tests for serum titrations as

found by the authors to be the same as in tests on man. Test doses greater than 5 skin toxin doses can also be used in groups of rabbits in which reactions to 1 and 5 skin toxin doses in a preliminary ear test were found to be below the adopted standard. Serum values obtained in titrations against different doses of the same toxin are about the same.

Journal of Infectious Diseases, Chicago

52 279 430 (May-June) 1933

- Bacteriologic Investigation of Blood in Rheumatic Fever Presenting Evidence of Dissociation of Microorganisms Recovered from Blood Cultures Bessie R Callow New York—p 279
- *Phenyl-Mercuric Compounds Their Action on Animals and Their Preservative Values I A Weed and E F Ecker Cleveland—p 354
- Antigenic Properties of Rabies Virus III Composition of Serologic Variants and Nature of Fixed Virus L C Havens and Catherine R Mayfield, Montgomery Ala—p 364
- Dissociation in Genus *Brucella* B S Henry Berkeley Calif—p 374
- Differentiation of Bovine and Porcine Strains of *Brucella Abortus* Based on Dissociation B S Henry Berkeley Calif—p 403
- Strain of *Clostridium Welchii* Producing Fatal Dysentery in Lambs E A Tunnichff Bozeman Mont—p 407
- Epidemic Infection of Guinea Pigs with *Salmonella Enteritidis* E Jungheer and W N Plastryge Storrs Conn—p 413
- Role of Bacteriophage in Natural Purification P J Beard San Francisco—p 420

Phenyl-Mercuric Compounds—The experiments of Weed and Ecker show that, despite the high bactericidal action of phenyl-mercuric salts they are relatively nontoxic to animals, whether given orally, intraperitoneally or subcutaneously. Isotonic phenyl-mercuric chloride used to irrigate the bladders of rabbits gave comparatively less inflammatory reaction than did saline solution. A lethal dose of phenyl-mercuric nitrate given intravenously produced acute nephrosis. The digestive action of trypsin and pepsin was not inhibited by the presence of phenyl-mercuric chloride. Vaccines prepared by treating cultures of *Bacillus typhosus* and *B. proteus* with phenyl-mercuric nitrate retained their antigenic power as regards the production of agglutinin. Human serum treated with phenyl-mercuric chloride retained its precipitinogenic power. Diphtheria toxin treated with phenyl-mercuric nitrate for five months retained its original minimal skin reaction dose. The lytic action of lysozyme was not inhibited by phenyl-mercuric chloride. The presence of phenyl-mercuric chloride did not interfere with the action of complement.

Journal of Nervous and Mental Disease, New York

77 561 680 (June) 1933

- Malignant Tumors of Hypophysis Invading the Diencephalon Clinical and Pathologic Study of Four Cases Without Acromegaly E B Fink Chicago—p 561
- Colitis—Psychogenically Motivated Report of Case A Bell New York—p 587
- *Clinical Observations on Value of Hoffmann Sign T Fay Philadelphia, and H B Gotten Memphis Tenn—p 594
- Chemical Studies in Epileptic Syndrome I Whole Blood Cholesterol Helen Hopkins Los Angeles—p 601
- *Isolated Neuritis of One Sensory Filament of Mixed Nerve A Gordon Philadelphia—p 617

Value of Hoffmann Sign—Fay and Gotten point out that the so-called Hoffmann sign appears to be a delicate reflex phenomenon associated with organic diseases of the nervous system situated above the cervicoventral region. It compares favorably with the Babinski reflex as a reliable index of organic disease in the cortical spinal pathways. It may at times appear without a Babinski reflex when the lesion is focal to the fibers or areas concerned in motor function of the upper extremities. Tromner described the sign in the following way: "Snap the tip of the nail of the middle finger or index finger of the patient with your own middle finger. If a definite flexion of all fingers and thumb results, there is organic disease above the flexor centers. This phenomenon is found always and only in spastic paralysis of the arm." The results of the authors' study of 393 normal students, 285 patients without organic disease and 339 patients showing organic nervous disease have convinced them that the Hoffmann reflex is valuable and reliable and should find wider application in routine clinical examinations. Twenty-one of the students gave a positive Hoffmann sign as compared to fourteen giving a positive Babinski reflex. Two patients in the group without organic disease gave a positive Hoffmann sign and only one gave a positive Babinski reflex. Of the patients showing organic nervous disease 132 gave a positive Hoffmann sign and 140 gave a positive Babinski reflex.

Isolated Neuritis—Gordon describes an isolated neuritis of one sensory filament to the exclusion of others of a mixed nerve. The few cases of such a neuritis reported in the literature have reference to the extremities and more frequently to the upper than to the lower ones. The special interest of the present case lies in its occurrence in a part of the body other than the limbs. The auriculotemporal nerve was affected after a blow to the left side of the face. The clinical picture corresponds with mathematical exactness to the anatomic distribution of that small nerve branch.

Journal of Nutrition, Springfield, Ill

6 225 311 (May) 1933

- Effect of Diet on Egg Composition II Mortality of Embryos in Eggs from Hens on Diets Containing Protein Supplements of Different Origin T C Byerly, H W Titus and N R Ellis Washington D C—p 225
- Id III Relation of Diet to Vitamin B and Vitamin G Content of Eggs Together with Observations on Vitamin A Content N R Ellis D Miller H W Titus and T C Byerly Washington D C—p 243
- *Comparative Effect of Tomato and Orange Juices on Urinary Acidity L G Saywell and E W Lane Berkeley Calif—p 263
- Evaluation of Phosphorus Deficiency of Rickets Producing Diet A T Shohl Helen B Brown Edna E Chapman Catharine S Rose and Esther M Saurwein Cleveland—p 271
- Spectrographic Analysis of Milk Ashes II Blumberg and O S Rask Baltimore—p 285
- Studies on Role of Zinc in Nutrition J M Newell and E V McCollum Baltimore—p 289
- Calcium Retention on Diet Containing Leaf Lettuce Marguerite G Mallon I Margaret Johnson and Clara R Darby Lafayette Ind.—p 303

Tomato and Orange Juices, and Urinary Acidity—Saywell and Lane report experiments with men on a basal diet and on the same basal diet supplemented by tomato and orange juices. They observed the following results when the juices were added to the basal ration: 1 An average increase of the urinary pH of 12 pH units was produced by 1,000 cc. of tomato juice taken daily. An equal quantity of orange juice produced a similar average increase of 105 pH units. 2 Corresponding decreases in the ammonia excreted and in the total acidity were noted. The average changes produced by the two juices were approximately the same. 3 There was an increase of the alkali reserve calculated according to the method of Fitz and Van Slyke, above the normal for each subject. This increase was quite marked for both juices. 4 There appeared to be a correlation between the alkalinity of the ash and the reaction of the urine. A more basic reaction was associated with the higher ratio of soluble alkalinity to insoluble alkalinity of the ash. The tomato juice exhibited the higher ratio and produced a somewhat larger change in reaction. 5 An increase occurred in the organic acids excreted when tomato or orange juice was added to the basal ration. 6 The average oxidation of the organic acids of tomato juice was 90.7 per cent, while that of orange juice was 93.8 per cent.

Kentucky Medical Journal, Bowling Green

31 271 308 (June) 1933

- Pellagra J F Harrell Bardwell—p 272
- Radical Treatment of Joint Tuberculosis R L Woodard Louisville—p 273
- Clinical Instruction in Dermatology and Syphilology in the University of Louisville C B Willmott Louisville—p 275
- Clinical Progress in Obstetrics E Speidel Louisville—p 278
- Early Symptoms of Acute Poliomyelitis J J Moren Louisville—p 282
- Studies on Circulation Analysis of Some Problems of Circulation in Man in Normal and in Pathologic States by the Use of the Injection Method J M Kinsman J W Moore and W F Hamilton Louisville—p 285
- Some Causes of Blindness C T Wolfe Louisville—p 289
- Anorectal Abscess B Asman Louisville—p 291
- Some Practical and Theoretical Points in Oxygen and Carbon Dioxide Therapy W H Long Louisville—p 295
- Recent Developments in the Department of Psychiatry W E Gardner Louisville—p 299
- Recent Advances in Pediatrics J H Pritchett Louisville—p 302
- Progress of Nasal Sinus Diseases W Dean Louisville—p 305

Medical Annals of District of Columbia, Washington

2 127 152 (June) 1933

- Treatment of Rectal Cancer J O Warfield Jr Washington—p 127
- Treatment of Prostatism by Resection H N Dorman Washington—p 131
- Mammoth Inoperable Scrotal Hernia Report of Case J A Cahill Jr Washington—p 137

Medical Journal and Record, New York

137 397 440 (May 17) 1933

- Proximate or Basal Cause of Rheumatism Rheumatism in Relation to Heat or Temperature Regulation L J Llewellyn and A B Jones London England—p 397
- Value of Injections in Dermatoses H D Niles New York—p 402
- Clinical Observations on Use of a Bismuth Compound as Hair Dye F A Diasio New York—p 404
- Napkin Rash in Babies E Pritchard London England—p 408
- Feminine Hygiene W S Pugh New York—p 409

Michigan State M Society Journal, Grand Rapids

32 349 382 (June) 1933

- Childhood Tuberculosis H C Metzger Detroit—p 349
- Epidermophytosis of Hands and Feet N E Aronstam Detroit—p 352
- Retropharyngeal Abscess with Hemorrhage and Fatal Outcome W S Conway Petoskey—p 354
- *Treatment of Arthritis by Artificial Fever Preliminary Report of Twenty Cases J M Berris Detroit—p 355
- Diabetes in Twins Case Report F B Peck Detroit—p 359
- Management of the Advanced Cancer Patient During First Year's Operation of Mercy Hall H C Saltzstein Detroit—p 360
- *Treatment of Chronic Endocervicitis F G H Maloney, Ironwood—p 363
- *Intravenous Use of Triple Typhoid Vaccine in Gonorrheal Infections L D McMillan Central Lake—p 365

Treatment of Arthritis—Berris describes a method for the production and control of hyperthermia. The meal preceding the treatment is replaced by a liberal allowance of fluids. During treatment, tepid water is allowed. Otherwise the usual dietary regimen is followed. The patient is placed in a large wooden, air-insulated cabinet so arranged that the patient reclines on a rubber couch with his head in the open air, with the thermostat in position, the cabinet is closed and the electrical heating element and water vaporizer are put in operation. Pulse readings are made every five minutes. Blood pressure records may be made by leaving one arm of the patient outside the cabinet. Body temperatures of from 102 to 103 F are usually attained in from forty to sixty minutes, and from 103 to 105 F in from sixty to ninety minutes. These levels are attained with a cabinet temperature which usually does not exceed 130 degrees. Restlessness and apprehension are allayed by applying cool cloths to the patient's head and by massaging the head and neck. When the predetermined level of hyperthermia has been reached, the main switch of the apparatus is opened and the patient is quickly dried and transferred to the ward. Heat loss is minimized by wrapping the patient in heavy woolen blankets. The temperature level may be well sustained for from four to eight hours by the use of hot water bottles. When the mouth temperature has dropped to 99 F, body massage and manipulation of affected joints and muscles are instituted and the patient is given a shower or an alcohol rub and is discharged. The entire period of treatment usually consumes from four to six hours. Three treatments weekly for three weeks constitute a course, temperature levels of about 102 F being used. As many as twenty treatments over a period of five weeks have recently been given. No other therapy is administered during the period of these treatments. Of the author's series of twenty cases of various types of arthritis, resistant to other methods of treatment 75 per cent have shown definite improvement. The improvement obtained seems to depend on peripheral vascular dilatation and improvement in local circulation.

Chronic Endocervicitis—In treating chronic endocervicitis with the cautery Maloney uses no anesthetic. He places the patient in the dorsal recumbent position, exposes the cervix by a Graves speculum and washes the vagina with a quart of compound solution of cresol. The speculum is rotated so that the solution comes in contact with all parts of the vagina. After sponging the cervix and vaginal walls he freely applies mercurochrome. The usual technic is to make a linear cauterization in normal tissue outside the margin of the inflamed area and then thoroughly cauterize the entire outlined area, going well up into the canal but not to the internal os. The depth necessary to insert the cautery tip varies from a fourth to a half inch depending on whether there are cysts or not, but the entire infected gland-bearing area is thoroughly cauterized regardless of how deeply it is necessary to go and the entire procedure is done at one sitting. He then reapplies mercurochrome and inserts a cotton tampon dipped in a solution of sulphurated bitumen and glycerin. The patient is instructed to

remove the tampon in two days and to return in three days and, thereafter, two times a week until complete healing has taken place. This averages about six weeks. At each visit the vagina is gently syringed out with compound solution of cresol, mercurochrome is applied to the whole vagina and the patient is warned not to take douches. After the slough has disappeared, the granular area becomes smaller and smaller until it is entirely covered by normal epithelium, the canal being the last to heal. If the granulations become exuberant or seem to require stimulation, they are touched up with a 10 per cent solution of silver nitrate instead of being treated with mercurochrome. There are a few contraindications for the use of the cautery in treatment of the cervix. Acute vaginal or cervical inflammation should be treated with hot douches and allowed to subside before the cautery is used. Infections, such as acute endometritis, salpingitis and pelvic cellulitis, should be allowed to subside before cauterization is done. Pregnancy in the first three months is not a contraindication in properly selected cases, but in acute inflammation or a history of a previous abortion it should not be performed.

Use of Typhoid Vaccine in Gonorrheal Infections—McMillan treated eleven patients infected with gonococci by injecting triple typhoid vaccine intravenously, thereby inducing a marked hyperpyrexia. In every patient a drop in temperature occurred at a period varying from two to four hours after the injection of the vaccine and varying in amount from one to four degrees. This drop was followed by a secondary rise of from one to four degrees. The profile curve is always dicrotic. With an initial dosage of 0.3 cc the lowest fastigium is 101.5 F, the highest 104.5 F. The use of this method produces great prostration and usually emesis. The effects of the second injection of 0.5 cc, two or more days later is but a repetition of the clinical picture of the 0.3 cc injection except that the second injection appears more effective than the first to influence favorably the course of the infection. In no case in the series was albuminuria reported. In all cases the improvement noted was permanent.

New England Journal of Medicine, Boston

208 1027 1076 (May 18) 1933

- Classification and Certain Pathologic Aspects of Chronic Arthritis C S Keefer Boston—p 1027
- Recent Studies in Rheumatoid (Chronic Infectious Atrophic) Arthritis M H Dawson and R H Boots New York—p 1030
- Speculations on Etiology of Rheumatoid Arthritis Based on Physiologic Studies of Normal Joints W Bauer G A Bennett and C L Short Boston—p 1035
- Tumors of Small Intestine Few Remarks Concerning Surgical Treatment of Small Intestinal Tumors by Dr Frank H Lahey E D Kiefer Boston—p 1042
- Brief Summary of Results in Treatment of Carcinoma of Endometrium G V Smith Brookline Mass—p 1049

208 1077 1134 (May 25) 1933

- Psychiatry Psychiatry Today R A Noble London England—p 1086
- Id Psychiatry in Relation to Hospital Practice D J MacPherson Boston—p 1091
- Id Psychiatry in Private Practice A V Bock Boston—p 1092
- Delay in Treatment of Cancer C C Simmons E M Daland and R H Wallace Boston—p 1097

208 1135 1182 (June 1) 1933

- Use of Record Forms and Mechanical Methods of Analysis in Study of Clinical Data J Lerman and J H Means Boston—p 1135
- Early Detection of Pulmonary Tuberculosis H D Chadwick Detroit—p 1143
- Erythroblastic Anemia Case Report D W Parker Manchester N H—p 1147
- *Methylene Blue in Treatment of Poisonings Associated with Methemoglobinemia Report of Two Cases C W Steele and W W Spink Boston—p 1152
- Follow Up of Gonorrhea and Syphilis in Private Practice A A Nelson Boston—p 1153
- *Pregnancy Coincident with Cirrhosis of Liver Report of Case B Tenney Jr and R B King Boston—p 1157
- Tetanus with Unusual Early Symptom Case Report P H Leavitt Brockton Ma—p 1160
- General Spinal Anesthesia Report of Case G M Saunter Kingston Jamaica British West Indies—p 1161

Methylene Blue and Methemoglobinemia—Steele and Spink present two case of poisoning which showed the presence of methemoglobin in the blood. Both patients were given an intravenous injection of a 1 per cent saline solution of methylene blue with resultant recovery. Both patients ingested poisons which caused grayish blue cyanosis, stupor and chocolate colored

blood with positive spectroscopic test for methemoglobin. The vomitus of one patient was not analyzed, in the other, the analysis revealed acetanilid in large amount. Fifteen minutes after the administration of the dye there was a disappearance of cyanosis, a return to consciousness, and the methemoglobin brand was absent in the patient who ingested acetanilid while the blood of the other patient was normal in color. The authors conclude that the two possible explanations of the action of methylene blue are that (1) the dye may combine directly with the poison to form a nontoxic compound which is excreted or (2) the poison may combine with hemoglobin to form methemoglobin, but the dye acting as a catalytic agent, may accelerate the reversal of this process.

Pregnancy with Cirrhosis of Liver—Fenney and King relate the history of a case of proved cirrhosis of the liver complicated by pregnancy in which the first laboratory studies made three months before delivery in an effort to determine the extent of liver damage, were all essentially normal except for the sugar tolerance curve. This showed an absence of the usual transient hyperglycemia seen in persons with normal liver function. The fatty acids of the blood were definitely increased above normal, though whether the damaged liver was responsible is open to question since the pregnancy alone could account for such an increase. The second series of analyses was made one hour before delivery. The high level of the fatty acids of the fasting blood suggests that at that time the liver was beginning to show the effect of the superimposed pregnancy. Two weeks after delivery this level had fallen to that of three months before delivery. Both the epinephrine fatty acid and sugar curves were distinctly abnormal and pointed to considerable liver insufficiency despite the removal of the burden of pregnancy. Six months later the curves were nearer normal though still suggesting definite liver damage. At no time was there any evidence of toxemia.

Philippine Islands Med Association Journal, Manila

13 235 276 (May) 1933

- Observations on Prevention and Control of Tuberculosis in Foreign Countries S A Francisco Los Baños —p 235
Ophthalmic Migraine of Allergic Origin A B M Sison Manila —p 250

Southern Medical Journal, Birmingham, Ala

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- Primary Diseases of Retinal Blood Vessels W R Buffington New Orleans —p 481
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*Tuberculous Endophlebitis with Obliteration of Superior Vena Cava Report of Case H C Schmeisser Memphis Tenn H Fuller Mulberry Fla and I H Jones Paris Tenn —p 501
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Sinus Infection in Children G S Osineup Orlando Fla —p 521
Urgent Abdominal Surgery in the Aged I Cohn New Orleans —p 524
*End Results of Ten Years Study of Treatment of Pregnancy Syphilis in Trimesters J R Reinberger and P W Toombs Memphis Tenn —p 532
Suprapubic Cystotomy and Bladder Paralysis M L Boyd Atlanta Ga —p 540
Fractures About the Orbit S S Evan Memphis Tenn —p 548
Throat Manifestations of Blood Dyscrasias Case Reports E H Jones Vicksburg Miss —p 550
Calcium and Phosphorus Metabolism in Case of Celiac Disease F J Wampler and J C Forbes Richmond Va —p 555
Roentgen Ray Treatment of Tuberculous Cervical Lymph Nodes R I Reeves Durham N C —p 555
Tuberculosis in a Rural Area A H Graham Opelika Ala and J N Baker Montgomery, Ala —p 560
Roentgen Ray Therapy of Pertussis L Von Meissenbug New Orleans —p 565

Tuberculous Endophlebitis with Obliteration of Superior Vena Cava—Schmeisser and his associates report the second case of tuberculous endophlebitis with obliteration of the superior vena cava. The occlusion was complete. The blood from the entire systemic venous circulation except that from the heart entered the right auricle by means of the inferior vena cava. The entire systemic venous circulation except that of the heart was in a state of chronic passive congestion. The

collateral circulation is recorded diagrammatically. The authors believe that the anomaly of the left common carotid artery taking origin from the innominate artery suggests that the closure of the auricular orifice of the superior vena cava may have been congenital. After a congenital closure, tubercle bacilli from the focus in the lung or in the pleural cavity could have entered the circulation and could have settled out from the blood into the superior vena cava, causing the endophlebitis.

Treatment of Pregnancy Syphilis in Trimesters—In their 1000 cases of syphilitic pregnancies, Reinberger and Toombs reduced syphilitic tragedies, including new born infants stillbirths and abortions, from 100 to 35 per cent. Pregnancy does not alter the reaction. Positive Wassermann and Kahn tests indicate syphilis, though there is no clinical evidence. The earlier treatment is instituted, the more likely is one to obtain living normal babies. The serologic evidence at birth is more important than clinical evidence. Regardless of treatment there is yet a small percentage of syphilitic tragedies. Even though the patient has had intensive treatment and is serologically negative she should have treatment in each succeeding pregnancy. Treatment has no deleterious effect on the mother or the baby, regardless of the trimester in which it is instituted. Approximately 80 per cent of the patients seen in early infancy and kept under observation and treatment for two years have remained free from positive serologic tests. Infants born of syphilitic mothers who have negative blood and spinal Wassermann reactions are kept under observation and checked every three months for two years.

Texas State Journal of Medicine, Fort Worth

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- Vincent's Infection Some Comments Concerning Its Incidence Complications and Present Status of Therapy W D Gill San Antonio —p 7
Recent Advances in Psychiatry A Hauser and T H Harris Galveston —p 12
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King Ulcer of Corner C P Schenck Fort Worth —p 22
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Stomatitis with Aplastic Anemia Occurring During Treatment of Syphilis with Nearsphenamine Case Report J B Bennett, Falfurrias and J T Pritchard Fort Worth —p 40
At the Crossroads W F Starley Galveston —p 41

Western J Surg, Obst & Gynecology, Portland, Ore

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- Curability of Cancer of the Breast E I Bartlett San Francisco —p 243
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Evaluation of Transurethral Prostatic Resection A J Scholl Los Angeles —p 278
Gross Meckel's Diverticulum S Robinson Santa Barbara Calif —p 285
Ovarian Anomalies Report of Case of Bilateral Failure to Descend R D Forbes Seattle —p 292

Yale Journal of Biology and Medicine, New Haven

5 421 508 (May) 1933

- Discoverer of Anesthesia Dr Horace Wells of Hartford H W Erving Hartford Conn —p 421
Distribution and Movement of Water and Solutes in Human Body J P Peters New Haven Conn —p 431
Salivary Gland Tumors in Rare Sites Report of Two Cases B Halpert New Haven Conn —p 469
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Effect of Bacteriophagy on Protoplasm (Paramcium) M L Rakieten New Haven Conn —p 487

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

50 81 148 (Summer) 1933

- Surgery for Pain E R Carling—p 81
Thirty Years Progress in Study of Rheumatic Heart Disease By the late C F Coombs—p 93
Familial Multiple Telangiectases of Skin and Mucous Membranes G R Scarff—p 113
*Need for Standard Method of Estimating Blood Pressure G A Stephens—p 121

Estimating Blood Pressure—Stephens in estimating the blood pressure, places the armlets (2 by 11 inches) of two sphygmomanometers on one arm, the one below the other. He inflates the upper armlet until the pulse ceases to be felt, when the reading on the upper dial gives the systolic pressure, and then inflates the second armlet until the needle on the upper dial is moved upward a point, when the reading on the lower dial gives the basic pressure. He believes that his method is mechanical and objective, requiring the minimum of skill and judgment, whereas the auscultatory method depends on the capacity of the physician to detect and discriminate between various sounds which are not readily heard. The limitations of the auscultatory method are in cases of irregular hearts, when there is a difference of intensity between successive sounds, when the arm is too thickly covered with fat when there is no artery large enough to auscultate and when one has no ear for differences of sound and is unable to detect the right sound at the right time.

British Journal of Physical Medicine, London

S 17 32 (June) 1933

- General Light Baths in Surgical Tuberculosis H Gauvain—p 19
Place of Artificial Sunlight Treatment in Minor Ailments E J MacIntyre—p 22
Colonic Lavage Fallacies and Facts W K Russell—p 24
Treatment of Invalids from Tropics at Spas W Byam—p 26
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British Medical Journal, London

I 949 992 (June 3) 1933

- Practical Problems in Pediatrics A D Fordyce—p 949
*Transitory Arthritis of Hip Joint in Childhood Investigation of Arthritis of Hip in Ninety Seven Children R W Butler—p 951
Dyspepsia and Its Surgical Significance J J Robb—p 954
Vasodilator Effects of Pneumogastric Nerve D T Barry—p 956
Sphygmomanometer in Diagnosis of Cardiac Irregularities M E Shaw—p 957
Choice of Operation for Cataract on Previously Trephined Eye R H Elliot—p 958
Fatal Case of Undulant Fever in the North of Scotland D M Marr—p 959

Arthritis of Hip Joint—In his investigation of arthritis of the hip in ninety-seven children Butler found that fifty-six were tuberculous. Thirty-four were suffering from a transitory arthritis only without any abnormality being shown by roentgenograms at any time. Seven had a transitory arthritis as a reaction to a localized bone infection near the joint, without true joint infection. A transitory arthritis without roentgen changes is common in childhood and is frequently diagnosed as tuberculous. Sometimes it may be traumatic in origin, but more often it is infective, the infection being often secondary to a focus elsewhere in the body. The prognosis of this transitory arthritis is excellent. The author gives a follow up of twenty-two of the patients for an average period of three years. A transitory arthritis is difficult to differentiate from a commencing tuberculous infection of the joint. Clinically the two may be identical and remain so for days or even weeks. The roentgenogram is negative in a transitory arthritis except in the type due to a well defined neighboring bone focus but a negative roentgenogram does not absolutely exclude tuberculosis. As a matter of fact the roentgenogram is seldom absolutely negative in tuberculous arthritis when first brought for examination. Of the fifty-six children coming under treatment for early tuberculous arthritis of the hip there was only one whose roentgenogram at that time was absolutely negative. All the others showed bone atrophy about the affected joint most of them with loss of the joint space as well and many with bone

destruction already progressing. With a completely normal roentgenogram the diagnosis should be transitory arthritis rather than tuberculous. The earliest stages of a virulent pyogenic epiphysitis or pyemic joint may show a negative roentgenogram, but the differentiation of these from a transitory arthritis cannot be long delayed on both clinical and roentgenologic grounds. The roentgenogram in pseudocoalgia will seldom be so near to the normal that differentiation from a transitory arthritis will give rise to difficulty. All doubtful cases of arthritis in childhood must be watched carefully and treated like an arthritis that is likely to be progressive.

Journal of Mental Science, London

79 235-432 (April) 1933

- Depressive Reaction Types W McC HAYDOCK—p 235
Jung's Theory of Psychologic Types Critical Estimate T M DAVIE—p 247
Crime in Schizophrenic Reaction Types J H MURDOCH—p 286
Types of Mental Deficiency and Their Social Significance E O LEWIS—p 298
Human Figure Drawings of Adult Defectives C J C EARL—p 305
The Mongol New Explanation (Fourth Communication) R M CLARK—p 328
Action of Barbituric Acid Compounds Contribution to Prolonged Narcosis Treatment of Mental Symptoms A M MEERLOO—p 336

Journal Obst and Gynec of Brit Empire, Manchester

40 541 748 (June) 1933

- Mechanism of Uterine Action and Its Disorders W BLAIR BELL M M DATNOW and T N A JEFFCOATE—p 541
Influence of Pituitary Gland on Parturition II Metabolism Studies During Injections of Extracts of Posterior Lobe of Hypophysis S MORRIS—p 580
Clinical Note on Involution of Uterus B SOLOMONS—p 606
*Anaerobic Streptococci Associated with Puerperal Fever L COLEBROOK and R HARE—p 609
Source of Puerperal Infections with Anaerobic Streptococci ELIZABETH WHITE—p 630
Thymophysin O WALLIS—p 633
Some Aspects of Ovarian Dysfunction J R GOODALL—p 640
Ectopic Pregnancy with Unusual Symptoms Case J B DAWSON—p 652
Suggested Chart for Recording Results of Test Labors R C BROWN—p 654

Anaerobic Streptococci and Puerperal Fever—Colebrook and Hare isolated anaerobic streptococci from the blood in forty cases of puerperal infections during the last four years. In the same unselected group of cases of puerperal fever there have been sixty-two which gave a growth of *Streptococcus pyogenes* from the blood. In only two cases were *S. pyogenes* and the anaerobic varieties present together. These anaerobic organisms rank second only to the group of hemolytic streptococci as causative agents of puerperal infection. In performing a blood culture the authors obtained 4 cc of blood from the patient using 2 cc for aerobic and 2 for anaerobic cultivation. One of the latter two was inoculated into Lepper and Martin's minced-meat-broth medium under petrolatum; the other was inoculated into a liver digest trypsin medium under a petrolatum seal. The authors' experience with this blood culture routine has confirmed the view previously stated by Colebrook that the use of fluid mediums for the isolation of these organisms from the blood is preferable to the method of long agar shake cultures. Two types of anaerobic streptococci or one type and some other organism are frequently present at the same time in the circulating blood. *Streptococcus pyogenes* is seldom associated with anaerobic streptococci in multiple blood infections. Anaerobic streptococci unlike *S. pyogenes*, *S. viridans* and other aerobic varieties are unable to multiply freely in human blood or serum but when the all-*in* reserve of the serum is abolished or reduced or when the antitryptic power of the serum is neutralized they grow abundantly. Acidification of the serum favors the growth of other quite unrelated bacterial species e.g. *Staphylococcus* and *Streptococcus pyogenes* and *Bacillus coli*. The serous discharges from the uterus after the third day of the puerperium are found to have a much reduced all-*in* reserve or actual acidity and a loss of antitryptic power such as will readily account for the profuse growth of the anaerobic streptococci and which is responsible for the offensiveness of the lochia in infected cases. It is highly probable that owing to the ischaemia of the uterine wall during the first week of the puerperium its tissues are in a state of acidosis thus favoring the proliferation of many bacterial types and especially of the anaerobic streptococci.

The authors suggest that conditions of local acidosis may play an important part in favoring bacterial infections, quite apart from the puerperal state. Biochemical and serologic tests have not, up to the present, served for differentiation of the *intra*erobic streptococci. It is probable that they are a number of serologically distinct types.

Journal of Physiology, London

78 225 338 (June 12) 1933

- Action Potentials in Sympathetic Nerves Elicited by Stimulation of Frog's Viscera Sarah S. Tower—p. 225
 Efficiency of Isolated Muscle in Relation to Degree of Aerobic Activity M. Cattell and E. Lundsgaard—p. 246
 *Action of Ether on Sympathetic System B. B. Bhatia and J. H. Burn—p. 257
 Rhythmic Activity in Skeletal Muscle Fibers E. D. Adrian and S. Gelfan—p. 271
 Glycogen Synthesis in Small Intestine E. A. Horne and H. E. Mägee—p. 288
 Resynthesis of Creatinephosphoric Acid in Frog's Muscle Poisoned with Iodoacetic Acid C. A. Mawson—p. 295
 Supposed Inhibitory Action of Auricles on Amplitude of Ventricular Contractions in Heart of the Frog Alison S. Dale—p. 302
 Reactivity and Activity of Rabbit's Uterus During Pregnancy Parturition and Puerperium J. M. Robson—p. 309
 Theories of Muscular Contraction A. D. Ritchie—p. 322
 *Polymorphonuclear Lymphocyte Ratio at an Altitude of Five Thousand Seven Hundred and Fifty Feet A. D. Stammers—p. 335

Action of Ether on Sympathetic System—According to the experiments of Bhatia and Burn, ether stimulates the sympathetic system, as shown by the following observations on decerebrate or spinal cats from which the suprarenals were removed. Ether causes (1) contraction of the spleen, (2) immediate inhibition of the intestine, (3) inhibition of the uterus of the virgin cat, and (4) rise in heart rate. The stimulus is applied within the central nervous system for the effects are not seen in the fully pithed animal, although a gradual intestinal paralysis may occur. The effect on the spleen in the decerebrate animal is abolished by nicotine. Ether usually has little effect on the blood pressure of the decerebrate cat without suprarenals, though it often causes an initial rise, after nicotine it causes a steep fall. When administered to the heart-lung preparation, ether greatly weakens the action of the heart, its effect is less than that of chloroform but is much more than is commonly supposed. The weakening of the heart does not result in a fall in blood pressure in the intact animal, because of the rise in arterial tone and increased output of epinephrine. There is no evidence that ether depresses the vasomotor system. Ether has no effect on the vessels of a limb perfused with blood. Chloroform and ethyl carbamate have the same action as ether.

Polymorphonuclear-Lymphocyte Ratio—Stammers states that an analysis of 171 cases of young healthy European adults, living at an altitude of 5,750 feet above sea level in the Transvaal, reveals a drop in polymorphonuclears of approximately 14 per cent and a rise in lymphocytes of about the same figure, as compared with the average normals (68.2 and 25.8 per cent respectively) for sea level. These observations are confirmed by another worker in the case of a group of eighty-one natives. So far as the differential leukocyte count has diagnostic value, the importance of recognizing these variations is obvious. The probable cause is the high degree of ultraviolet radiation which has been established for the locality of the investigation.

Journal of Tropical Medicine and Hygiene, London

36 157 168 (June 1) 1933

- *Dengue Fever with Hyperpyrexia Case M. Watson—p. 157
 Treatment of Malaria in Ceylon with Plasmoquine Quinine Compounds Critical Study of Fifty Cases E. C. Spaar—p. 158

Dengue Fever with Hyperpyrexia—Watson presents an instance of dengue fever complicated by hyperpyrexia in a girl, aged 13 months in whom the temperature rose to 105.6 F in the armpit, and a copious papular rash appeared on the chest, face and arms. Three days later desquamation commenced, just as in severe scarlet fever. There were no throat symptoms and no nasal catarrh. For the most part treatment consisted of the frequent application of cold sheets directly to the body. At times this acted slowly e.g. it took two hours to reduce the temperature from 106 to 102.4 F. The same day the temperature again rose to 105.6 F. the child was then laid

on a canvas bed and cold water (temperature about 80 F) poured directly over her. A full hour of this was required to bring the temperature down to 103 F, after which it fell to 100.2 F in half an hour. The instructions given were that when the temperature rose above 102 F in the rectum, cold should be applied, and the result was that during a considerable portion of two days the child was in a cold pack or a cold bath. On the sixth day the child was decidedly brighter and on the seventh day the temperature fell to normal and continued so thereafter.

Lancet, London

1 1107 1162 (May 27) 1933

- Duodenal Ileus R. P. Rowlands—p. 1107
 *Effects of Nitrite on Inverted T Wave in Human Electrocardiogram W. Evans and C. Hoyle—p. 1109
 Method of Differentiating Ganglion Cells and Their Study by Infra Red Photography D. M. Blair and T. Davies—p. 1113
 Epituberculosis Query as to the Entity of This Condition H. V. Morlock and A. J. S. Pincus—p. 1114
 Extrapleural Plombage B. Hudson and F. Haeblerlin—p. 1115
 Rheumatic Lesions in Lymph Nodes A. D. Fraser—p. 1117
 Agranulocytic Angina Its Treatment with Pentose Nucleotide Report of Case E. Bulmer—p. 1119
 Calculous Anuria Case G. T. Cook note by J. Everidge—p. 1120
 In Praise of Jejunostomy H. Hartley—p. 1122

Nitrite and Electrocardiogram—Evans and Hoyle studied the effects of nitrite on the inverted T wave of the electrocardiogram in twenty-three patients. Nine patients with upright T wave were also tested for comparison. An amount of 5 minims (0.3 cc.) of amyl nitrite was inhaled, and from 1/400 to 1/2 grain (0.0006 to 0.005 Gm.) of glyceryl trinitrate was given in a tablet and chewed. The cases were placed in four groups according to the combination of leads which showed inversion of the T wave. In group 1 it was inverted in leads I and II, in group 2 it was inverted only in lead I, in group 3 it was inverted in leads II and III, and in group 4 it was inverted only in lead III. The deformed T wave was raised by the drug in seven out of nine cases in group 1, in two out of seven in group 2, in one out of four in group 3, and in one out of three in group 4. None of the patients with upright T waves, studied in a supplementary series, showed any significant changes. Inversion of the T wave has received such prominence and is so important in relation to coronary disease and myocardial changes that the authors consider that its modification, which they have seen produced by nitrite, may contribute to the elucidation of T wave inversion. It is surprising that a change heretofore reckoned as a prolonged one should vanish in a moment with nitrite. An increased blood supply in the periphery of the affected portion of the myocardium can account for the correction of a deformed T wave, which must therefore not be regarded as an irreversible abnormality. They believe that elevation of the inverted T wave by nitrite in patients with angina is determined by the relief of myocardial ischemia and further observations may show that the fixed T wave and the one elevated by nitrite bear a different significance, and that this may prove to be a measure of the efficiency of the collateral circulation round a damaged portion of the cardiac muscle.

Tubercle, London

14 385 432 (June) 1933

- Chronic Pulmonary Catarrh and Fibrosis in School Children H. S. Banks and J. H. Weir—p. 385
 Treatment of Tuberculosis in Germany H. E. Schuchardt—p. 390
 Some Clinical Types of Tuberculosis L. S. T. Burrell—p. 394
 Further Results of Attempts to Desensitize Tuberculous Guinea Pigs J. Weinzierl, J. D. Thayer and J. Hirschmann—p. 398
 Revolution in Management of Pulmonary Tuberculosis J. Alexander—p. 407

Quart. Bull., Health Org., League of Nations, Geneva

2 1178 (March) 1933

- The Cape Town Conference Report of the International Conference of Representatives of the Health Services of Certain African Territories and British India Held at Cape Town Nov. 15 to 25, 1932—p. 3
 The Most Suitable Methods of Detecting Malnutrition Due to the Economic Depression (Conference Held at Berlin from Dec. 5 to 7, 1932)—p. 116
 Diet in Relation to Small Incomes W. R. Aykroyd—p. 130
 Typhoid Fever in Rural Areas I. Identification of Bacilli of Typhoid Paratyphoid Group L. Hirschfeld—p. 135
 II. Report of Bacteriologic Conference on Typhoid Fever Held at Warsaw from Nov. 28 to 30, 1932—p. 169

Paris Medical

30 93 104 (July 29) 1933

- Cancer of Stomach After Gastro Enterostomy for Gastric Ulcer Jean Vanier—p 93
*Immobilization of Lung by Alcoholization of Phrenic and Intercostal Nerves A Rodet—p 100

Immobilization of Lung by Alcoholization of Phrenic and Intercostal Nerves—Rodet states that immobilization of the lung or at least arrest of the evolution of pulmonary lesions can be accomplished by action on the innervation of the thorax, without bloody intervention. He reports two cases in which alcoholization of the phrenic nerve was used with favorable results. The method followed consists in first testing the patient's susceptibility to a solution of procaine hydrochloride by an injection into the epigastrium and then in anesthetization followed by alcoholization. The anesthesia is produced by injection of 2 cc of a 2 per cent solution of procaine hydrochloride at the diaphragmatic point (Gueneau de Mussy), the needle being passed obliquely upward and behind the junction of the seventh and eighth costal cartilages. Following this, 15 cc of 60 per cent alcohol is injected by inserting the needle 5 centimeters below the base of the xiphoid process and 5 millimeters to the side of the median line and directing it obliquely upward so that it reaches the insertions of the diaphragm behind the cartilage of the seventh and eighth ribs. Intense pain, in one case in the neck and in the other case in the shoulder, immediately after injection of the alcohol indicated that the phrenic nerve had been reached. The first patient had a large lesion of the left lung of six years' duration with large adhesions of the base. The first injection of alcohol produced a rapid defervescence. After a second injection following a cold with renewed fever, the patient remained afebrile. Expectoration was greatly diminished and the tubercle bacilli in the sputum became rare. The patient's general condition was so improved that she refused successive alcoholization of the intercostal nerves to complete the result. The second patient had a severe ulcerating unilateral lesion. Alcoholization of the phrenic nerve produced an immobilization of the left apex lasting a few months, and alcoholization of the intercostal nerves is now in progress. The latter method has been recommended as the method of choice when pneumothorax is impracticable because of adhesions provided it is used for two years and the injections are renewed every three or four months. It is less painful than alcoholization of the phrenic nerve and may be sufficient in itself.

Presse Medicale, Paris

41 1217 1232 (Aug 2) 1933

- Therapeutic Studies in Acute Experimental Nephritis L Binet and J Marek—p 1217
*Nonspecific Anergy to Tuberculin E Frommel A Sierro and W Bachmann—p 1218

Nonspecific Anergy to Tuberculin—Frommel and his associates noted that the diseases in which a decreased resorption time of the skin has been demonstrated by the McClure-Aldrich test are the same ones in which an anergy to the intracutaneous tuberculin tests is said to exist. To test the hypothesis that the anergy to tuberculin is related to the decrease in resorption time of the skin they simultaneously performed the McClure-Aldrich and the intracutaneous tuberculin test on four groups of patients: patients exhibiting edema at the moment of the test; patients with nervous diseases; patients with hepatic disease and a few patients with typhoid or manifest tuberculosis. They used 0.2 cc of serum with 0.85 per cent of sodium chloride for the McClure-Aldrich test and 0.1 cc of a 1:1000 solution of old tuberculin for the other test. In all four groups the intracutaneous reaction to tuberculin was with a few exceptions parallel to the resorption time of the wheal and inversely proportional to the degree of cutaneous infiltration. When the time of resorption was greatly reduced the intracutaneous reaction was aborted; when the resorption time was only slightly decreased the intracutaneous reaction occurred but was retarded or weak; and when the McClure-Aldrich test gave a normal response the intracutaneous reaction was typical. The results indicate that the power of resorption of the skin plays an important part in the failure of the intracutaneous reaction to tuberculin. The authors sug-

gest that the failure of the intracutaneous reaction is not due to a specific serologic or tissue anergy but to certain physico-chemical factors having no specificity.

Minerva Medica, Turin

2 209 240 (Aug 18) 1933

- *Vegetating Aortic Endocarditis Due to *Alcaligenes Melitensis* F Casanova and C D Ignazio—p 209
Treatment of Acute Purulent Arthritis of Large Joints G B Culmone—p 215
*Insulin and Gastric Chemistry E Filla and O Del Piero—p 222
Treatment of Essential Facial Spasm A M Dogliotti—p 228

Vegetating Aortic Endocarditis—Casanova and D'Ignazio describe a case of vegetating endocarditis of the aortic valves, developing during the course of a brucellosis in a young patient without history of previous disease. The isolation of *Alcaligenes melitensis* in pure culture from the blood and from the endocardial vegetations together with the results of histopathologic examination of sections of the vegetations and the general course of the disease allow the authors to affirm positively the melitococcic origin of the endocarditis.

Insulin and Gastric Chemistry—Filla and Del Piero have demonstrated on normal persons and on those suffering from impairment of the gastric function that, following injections of insulin, a hypersecretion of acid from the stomach takes place simultaneously with a reduction of the rate of glycemia. According to the authors, this hyperchlorhydria is not dependent on the direct action of insulin, which has been compared to histamine by other authors because of its action on the stomach, but is the direct exponent of the hypoglycemia due to insulin and of all the other conditions involved in the hypoglycemic syndrome. The gastric secretion is deemed one of the most important of these conditions as the earliest and most sensitive indicator of the hypoglycemia.

Policlinico, Rome

40 489 568 (Aug 1) 1933 Medical Section

- Technic of Preparation of Extracts for Diagnostic and Curative Cutaneous Reactions in Patients with Asthma P Molinari Tosatti—p 489
Blood Volume and Crisis in Arterial Hypertension with Particular Reference to Plethoric Conditions R Scotti Douglas and L Bordoli—p 507
Histogenesis of Extramedullary Hematopoiesis P Foltz—p 539
*Reaction of Henry in Serologic Diagnosis of Malaria M Biasiotti—p 557

Serodiagnosis of Malaria—Biasiotti applied Henry's serum reaction to 201 specimens of blood of which 154 were from patients with primary malaria and 47 from patients with recurrent malaria. The technic consists of preparing the melanin for melanoflocculation by removing the crystalline lens from the eyes of oxen, scraping the choroid and collecting the melanin together with the gelatinous liquid of the vitreous. To this is added twice the amount of distilled water and the whole is thoroughly mixed after which a 1:200 solution of formaldehyde is added and the mass is left standing for twenty minutes. It is next filtered through tightly packed glass wool and centrifugated in a sterile tube for five minutes at 4000 revolutions per minute. The blackish liquid that remains on the surface is decanted collected in a sterile container and preserved on ice. It is best to wait one month before using the prepared melanin because of modifications of opacity that occur in the original solution. The author recommends that the containers be shaken once a week in order to keep the melanin in fine suspension. Three dilutions are made from the original emulsion of melanin: one of 1 cc of melanin with 9 cc of distilled water, another of double the dilution of the first, and another of 1 cc of the first dilution with 9 cc of a saline solution at 3 per thousand. The tubes are shaken placed in an incubator at a temperature of 37°C for from two to four hours and left for fifteen minutes at room temperature. Reading is made three hours after the beginning of the reaction. Observations can be made with the naked eye. For iron flocculation 1 Gm of iron albuminate is dissolved in 600 Gm of bidistilled water and the solution is poured into sterilized glass ampules. The tubes of iron flocculation are prepared by adding 1 cc of the prepared iron solution to 0.2 cc of serum. The tubes after having been shaken are left in an incubator at 37°C for one and a half hours and then half an hour at room temperature. Reading is made two hours after the beginning of the reaction. In positive serum particles in the precipitate

vary in size according to the tubes used and in strong reactions, the precipitate is found at the bottom of the tube. Considering that melanin flocculation is more sensitive than iron flocculation, Henry advises that to six tubes of melanin only one or two tubes of iron flocculation be added. Of 154 specimens of primary malaria, 125 showed positive results. Of forty-seven specimens of recurrent malaria forty-one were positive. In twenty-five specimens taken from normal individuals, the reaction was completely negative as it was in twenty-five other persons with various acute and chronic diseases other than malaria. The author concludes that Henry's reaction is highly specific and sensitive and deems it valuable in laboratory determination of chronic latent and primary malaria and in splenomegaly of uncertain origin.

10 1321 1360 (Aug. 21) 1933 Practical Section

- Subjacksonian Circumscribed Serositis S. Solari—p. 1321
Castellani's Bronchitis and Tuberculosis I. Rongoni—p. 1323
*Gastric and Duodenal Ulcer and Their Surgical Treatment A. Puccinelli—p. 1326

Surgical Treatment of Gastric and Duodenal Ulcer—

According to Puccinelli the clinical entity of ulcer is based on symptoms due to anatomopathologic lesions such as hemorrhages, perforations and pains caused by the ulceration at the nerve endings of the area involved. Other subjective and objective symptoms found in the morbid picture of ulcer do not characterize the ulcer but express a lack of equilibrium in gastroduodenal function constituting a syndrome apart which may be called gastroduodenal dyspepsia. Gastroduodenal dyspepsia may be secondary to an abdominal disease such as appendicitis, cholecystitis and other lesions of inflammatory and toxic nature; it can be ascertained also in a recurrent form manifested by accesses that are often seasonal. This gastroduodenal dyspepsia whether secondary or recurrent renders the stomach and the duodenum particularly sensitive and creates conditions facilitating the appearance of ulcerative processes. The treatment of gastroduodenal ulcer must be based on supposed causes more than on symptoms and must seek to eliminate the ulcerative factor by extirpation and cure. Gastroduodenal dyspepsia should be surgically treated if its causes can be suppressed thereby (appendicitis, cholecystitis and so on) but must be medically treated when the causes disappear or are supposed to reside in alterations of metabolism or to be of other nature. In the medical treatment of ulcer the author deems conformation to the gastric rhythm more important than the quality of the food given to the patient. The treatment by indirect action based on pepsin, benzoate and other medicaments has a temporary beneficial effect but sometimes no effect at all. The symptomatologic surgical treatment of dyspepsia has no logical basis because its real character is unknown; only direct signs of an ulceration offer surgical indication. Surgical treatment of ulcer promises the best curative results when it is radical as in emergency operations but the conservative and corrective operations (gastroduodenostomy, pyloroplasty and gastrojejunostomy) have precise indications and offer good results.

Archivos Españoles de Pediatría, Madrid

17 289 336 (June) 1933

- *Sedimentation Speed of Erythrocytes as Early Diagnostic Sign in Whooping Cough C. Sainz de los Terreros—p. 289
Etiopathogenesis of Erythema Nodosum J. Dominguez Luque—p. 293
Present Status of Etiologic Problem of Scarlet Fever A. Ruiz Diez—p. 307

Sedimentation Test in Early Diagnosis of Whooping Cough—

On the basis of forty-four cases studied during an epidemic of whooping cough Sainz de los Terreros draws the following preliminary conclusions: 1. During the first two weeks of the disease, i. e. during the stage of catarrh, there is in the majority of children a retardation of the sedimentation speed contrary to what is found in bronchial and bronchopulmonary diseases in which there is no infection with Bordet's bacillus. 2. This retardation of the sedimentation speed disappears at times after the second and generally after the third week and changes to an increase of the sedimentation speed which is the rule in the majority of infectious diseases. 3. Differences found from case to case and even in the same patient are due to plasmatic changes which should be studied in order to arrive at safe conclusions.

Deutsche medizinische Wochenschrift, Leipzig

59 1155 1192 (July 28) 1933

- Suitability for Medical Profession F. Moritz—p. 1155
Psychopathic Personalities K. Schneider—p. 1156
Indications for Artificial Abortion H. Martius—p. 1160
*Persisting Differences in Vascular Tonus Following Lesion of Cerebral Cortex J. Popper—p. 1163
Scopolamine Lphetamine Lukodal Twilight Sleep in Urology W. Borgard—p. 1164
Symptomatology of Papular Pseudosyphilis W. Schmidt—p. 1166
Nature and Significance of Tuberculosis Vaccine AO (Arima Ohnawa) R. Arima—p. 1166
Meaning of Therapy A. von Weizsäcker—p. 1168
*Gastric Disturbances in Liver Echinococcosis D. Maluschew—p. 1170
Subcutaneous Traumatic Rupture of Stomach J. Fischmann—p. 1171
Moistening of Air in Heated Rooms W. Tiese—p. 1172
Professional Organization of Physicians in Italy E. Barth—p. 1173
Purpose, Nature and Aim of Modern Forensic Medicine E. Brack—p. 1175

Vascular Tonus and Cerebral Cortex—

Popper reports two cases illustrating the fact, pointed out by Pal that lesions of the cerebral cortex may result in persisting differences of vascular tonus. In such cases comparative bilateral palpation of the radial arteries shows the artery on the side contra lateral to the cortical lesion to be stiffer and sometimes wider than the other one. This is due to a loss or decrease of tonus through disturbance of the central tract for tonic innervation of the vascular wall. The tract for the tonic innervation of the blood vessels is in immediate proximity to the motor tracts and extensive lesions of the latter regularly involve the former. However, there may be lesions especially in the region of the basal ganglia which cause a decreased tonus of the arteries without causing paralysis. Occasionally, a difference in vascular tonus persisting for years is the sole remaining sign of a hemiplegia that has receded. Not only a pathologic process evolving within the cortex but one spreading from the meninges to the cortex may result in paralysis and reduced arterial tonus. In the two cases reported a difference in the vascular tonus of the radial arteries existed in the one case forty-five years and in the other case thirty-five years after the occurrence of a meningitis. These persisting differences in vascular tonus following cerebral processes demonstrate the significance of the cortical regulation of vascular tonus and may help to throw light on the diseases involving hypertonia of the arteries.

Gastric Disturbances in Liver Echinococcosis—Maluschew reports two cases of liver echinococcosis with severe gastric complications making a total of six cases seen by the author. In one of the cases reported there was a severe compression stenosis of the duodenum with high grade dilatation of the stomach. In the other case there was an ulcer on the upper edge of the pylorus which was joined to the gall bladder by adhesions at this point and drawn upward, and moderate dilatation of the stomach with severe dilatation of the upper horizontal portion of the duodenum. The author stresses the importance of a thorough roentgenologic examination of the stomach in echinococcosis of the liver.

Klinische Wochenschrift, Berlin

12 1081 1120 (July 15) 1933 Partial Index

- Attack of Appendicitis and Its Relations to Fecal Concretion L. Aschoff—p. 1081
Investigations on Behavior of Circulating Quantity of Blood and on Minute Volume in Human Beings in Connection with Surgical Interventions H. Schneider and H. Polano—p. 1086
Investigations on Allergic Diseases Experimental Studies on Allergic Diseases T. E. Haag—p. 1091
*Meningitis in Alcaligenes Abortus Infection Clinical Bacteriologic and Serologic Aspects A. Bingel and E. Jacobsthal—p. 1093
Intraperitoneal Medicinal Treatment J. Freundlich—p. 1095
Idem H. H. Meyer—p. 1097
Double Action of Irritative Plants on Skin and Mucous Membranes (Urticaria Hay Fever) Touton—p. 1098
Pathogenesis of Traumatic Herpes (Autovaccination by Scratching) H. Hruszek—p. 1099
Chemical Nature of Lipoid Antigens Particularly of Cerebral and Wassermann Antigen H. Rudy—p. 1100
Transmissibility of Vaccination Malaria by Anopheles H. Ruge—p. 1101

Meningitis in Alcaligenes Abortus Infection—Bingel and Jacobsthal, after reviewing the rather small literature on neurologic complications of *Alcaligenes abortus* infections, report their observations on a patient in whom meningitic symptoms developed. The case is noteworthy because it was possible for the first time to detect *Alcaligenes abortus* in the

cerebrospinal fluid This demonstration of *Alcaligenes abortus* together with the positivity of the complement fixation reaction and of the agglutination reaction in the cerebrospinal fluid seems to justify the assumption of a meningitis caused by *Alcaligenes abortus*. The authors are as yet not in a position to say anything about the prognosis of this form of meningitis. It takes a subacute course and the patient is still under observation.

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- Problem of Haff Disease F Flury—p 1161
Prevention and Treatment of Spinal Cord Disorders in Pernicious Anemia E Meulengracht—p 1163
Therapeutic Use of Dibromotyrosine in Hyperthyroidism I Abelin and C I Parhon Jr—p 1167
*Circulatory Aspects Following Experimental Removal of Suprarenals O Langsdorf—p 1169
Schultz Dales Experiments by Means of Dialyzed Trichophyton W Jadasohn and F Schaaf—p 1170
Damages Caused by Vitamin A Histologic Investigations on Rat Organs W v Drigalski and W Laubmann—p 1171
*Biliary Colic on Allergic Basis Their Diagnosis and Specific Therapy K P von Eiselsberg—p 1174
Purulent Cerebrospinal Meningitis Caused by *Micrococcus Catarrhalis* R Gaupp and A Axen—p 1177
Experimental Investigations on Electrical Injuries of Vascular Wall and Formation of Thrombi P Frank—p 1180
Significance of Examination of Gastric Contents for Diagnosis of Duodenal Ulcer H Kalk—p 1183

Circulation Following Removal of Suprarenals—Langsdorf observed in experiments on rabbits that the removal of both suprarenals produced on the heart and the vessels signs of a decreased sympathicotonia. The rest values of the pulse rate and of the blood pressure do not necessarily show this reduction and both may be unchanged compared to the normal, but the capacity to increase is noticeably reduced in the pulse rate as well as in the blood pressure. The heart develops muscular hypotrophy.

Biliary Colic on Allergic Basis—Von Eiselsberg describes the histories of three patients in whom certain foods such as milk, eggs and tomatoes, produced biliary colic. These foods did not produce this effect when, before eating them, the patients were desensitized by the administration of small doses of homogeneous peptones (propeptones according to Luthlen Urbach). The author points out that these case reports corroborate the theory of an allergic genesis of some cases of biliary colic and show the way for the therapy of such cases.

Medizinische Klinik, Berlin

29 999 1032 (July 21) 1933

- *Treatment of Edemas in Diabetes Mellitus K Stolte—p 999
Experiences in 1200 Gastrosopies K Gutzeit—p 1000
Some Optical Illusions and Their Significance M H Fischer—p 1002
Anterior Hypophysis—Function of Sex Glands and Essential Hypertension E Kylin—p 1004
Action of Counterirritants H Sippy and K Stejskal—p 1008
*Wild Glance a Lid Symptom of Neuropathic Nurslings B Epstein—p 1010
Subcutaneous Renal Injuries W Boss—p 1013
Photodermatic Tonus Reflex to Irradiation with Colored Light H Ehrenwald—p 1015
Simple Method of Ruling Counting Chamber in Counting of Blood Corpuscles A Hittmair—p 1017
Earth Rays A Nippoldt—p 1017

Edema in Diabetes Mellitus—Stolte aims to show that not insufficient utilization of food but rather an inadequate intake of nourishment is responsible for the diabetic edemas. He points out that many authors are of the opinion that the food supply of diabetic patients should be as restricted as possible. If edema develops they generally restrict the sodium chloride intake just as is done in patients with renal disease and occasionally diuretics are administered. However the author as well as other investigators have found that sodium chloride cannot be dispensed with in the treatment of diabetic edemas. He observed cases of diabetic coma in which the administration of insulin, water and sugar was not effective until after the patient had been given from 5 to 10 Gm of sodium chloride. He was induced to try this sodium chloride medication because the comatose state of diabetes greatly resembles the intoxication of nurslings. The loss of weight in these nurslings is effectively counteracted not by water but by sodium chloride more specifically by a solution of 0.5 per cent of sodium chloride and 0.5 per cent of sodium bicarbonate and in

the most severe cases only by giving nourishment particularly buttermilk. The author ascribes to the use of a more or less unrestricted diet the fact that edema is rare in the diabetic children in his clinic. The state of the diabetic patient and that of the nursling having severe diarrhea are similar in that both have to give off large amounts of fluid and that the tissues are attacked after all the free water has been eliminated. The author describes two cases illustrating the importance of an adequate food intake for the prevention and treatment of edema and he reaches the conclusion that the edema in a diabetic patient is really the edema of a cachectic patient, and that although such edemas can be checked by sodium chloride restriction and eventually by diuretics such treatment is of little avail for only the treatment of the underlying cause the cachexia, will improve the tissues and restore their normal water binding power.

A Lid Symptom in Nurslings—Epstein observed in a group of neuropathic nurslings a lid symptom resembling Dairmple's sign or von Gräfe's sign. The lid symptom gives the nursling a somewhat agitated, scared expression so that the author designates it as the 'wild glance'. The symptom was rarely uninterruptedly present, in general it developed temporarily and its intensity was subject to fluctuations. It was most severe when the nursling showed nervous alterations or when disturbances in the general condition existed. The lid symptom of the 'wild glance' was often noted at the onset of alimentary toxicosis.

Munchener medizinische Wochenschrift, Munich

80 1117 1158 (July 21) 1933

- Traumatic Tetanus E Lever—p 1117
Peritoneal Adhesions A Krecke—p 1119
*Surgical Treatment of Tonsils During Childhood M Nadoleczny—p 1124
Experiences with Ray Therapy in Skin Diseases J Thieme—p 1128
New Bacteriologic Investigations on Rheumatic Polyarthritis Hartleben—p 1131
Adaptation to New Function of Muscles Shifted in Course of Tendon Transplantation F Lange—p 1133
*Changes in Articulations of Vertebral Processes Little Considered Cause of Backaches M Lange—p 1134
Irradiated Ointments J Arendt—p 1137

Surgical Treatment of Tonsils During Childhood—Nadoleczny thinks that hyperplasia of the tonsils necessitates tonsillectomy only in rare cases, that is, only when it is the cause of respiratory disturbances and of considerable alterations in the tonality of the voice. Suppurative inflammations of the tonsils are comparatively frequent during childhood and are as such no indication for the removal of the tonsils, but operation may be indicated if the condition becomes chronic. Peritonsillar abscess likewise is no absolute indication for operation but acute septic diseases necessitate removal of the tonsils. In acute articular rheumatism preceded by tonsillitis tonsillectomy is often helpful but its value is doubtful in muscular rheumatism neuralgia and neuritis. The operation is more promising in acute glomerular nephritis and in embolic focal nephritis as long as nephrosclerosis has not yet developed. In chronic nephritis and in arthrostatic albuminuria tonsillectomy is ineffective. Opinion is still divided about the advisability of tonsil operations in chorea minor although operation is helpful in some instances. In severe cases of endocarditis and of myocarditis there is hardly any hope but in recurring or in polyarthritic endocarditis tonsillectomy is often effective. Glandular fever is often favorably influenced by tonsillectomy and by adenotomy, and diphtheria bacillus carriers have also been successfully treated by tonsillectomy. However tonsillectomy is no protection against diphtheria or against Vincent's angina because the nasopharynx, the fauces and the nose may still become involved. The decision about the advisability of the removal of the pharyngeal tonsils is generally less difficult than is that of the palatine tonsils but the author thinks that here likewise surgery has been overemphasized. He advises that the children be carefully examined before adenotomy is resorted to and he says that rhinoscopy is possible even in comparatively young children. In discussing the methods of tonsillar operations he points out that tonsillectomy is generally more effective than tonsillotomy. Since every operation injures the psyche of the child the operation should not be done simply on general indication but each case should be studied carefully as an unnecessary operation is detrimental not

only to the patient but also to the physician and the medical profession, for it destroys the confidence of the patient

Changes in Articulations of Vertebral Processes—Lange found that every deformity of the vertebral column is characterized by changes in the articulations of the vertebral processes. These changes are far in excess of the physiologic motility, and sooner or later the abnormality of the articular space becomes fixed. A part of the articular space may become wider and another part may be narrower or entirely obliterated, or the widening or narrowing may involve the entire space uniformly. The result of the positional changes is that the joints show wear prematurely and in arthrosis deformans develops early. The author stresses that arthrosis deformans is to be strictly differentiated from and not to be confused with spondylosis deformans of the bodies of the vertebra, the latter being caused by a degeneration of the intervertebral disks. The law of functional overburdening has the same significance for the development of the arthrosis deformans in the articulations of the vertebral processes as it has for the development of arthrosis deformans in the joints of the extremities, that is, the arthrosis commences at the sites of the greatest mechanical burdening, and in advanced cases the most pronounced changes exist likewise at these sites. The author discusses the development of arthrosis deformans in various disorders of the vertebral column, in scoliosis, in kyphosis and in vertebral fractures. In the latter disorder the development is particularly rapid. The studies on the pathology of the vertebral joints also indicated the cause of the backaches that sometimes occur in corpulent women with increased sacral concavity. It was observed that the articular spaces of the lumbar vertebrae had become wider and that the articular processes had become somewhat dislocated. This makes it understandable that these women complained of fatigue or of pain in the sacral region and that the wearing of a support gives them considerable relief.

SO 1159 1200 (July 28) 1933

- Critical Remarks on Epidemiology Clinical Aspects and Therapy of Acute Poliomyelitis P Krause—p 1159
Fundamentals of Pathogenesis and Treatment of Nervous Diseases F Keller—p 1163
Significance of Nasal Filtration for Pathogenesis of Pneumonococcosis G Lehmann—p 1166
*Changes in Bacterial Flora and in Decomposition Processes in Small Intestine Following Gastric Resection E Hertel and F Sartorius—p 1167
Epilepsy During Childhood J Zappert—p 1169
Mechanism of Action of Sulphur Baths H Freund—p 1172
Treatment of Internal Diseases by Peat Mull Packs Containing Thermophil Bacteria W Wohlenberg—p 1173
Developmental Mechanism of Supracondylar Fracture of Humerus Coenen—p 1174
Roentgenologic Visualization of Posterior Urethra by Means of Rectum Casette H T Schreus—p 1177
Finger Contractions in Women Who Do Milking H Hellner—p 1179
Fever Therapy of Metaphylis G Wullenweber—p 1181
Protectors Against Sunburn W Schultze—p 1184
Treatment of Insect Bites R Keller—p 1186
Meincke Clarification Reaction in Cerebrospinal Fluid E Meincke and B Holthaus—p 1186

Changes in Bacterial Flora Following Gastric Resection—Following gastric resection (Billroth I and II) on dogs with artificial fistulas in various segments of the small intestine, Hertel and Sartorius found an increase of insufficiently digested food, an increased and abnormal bacterial flora and evidence of increased decomposition processes in the small intestine. The increased bacterial flora contained, besides abundant colon bacilli, a large number of the gram-positive organisms typical of the flora of the large intestine. A manifold increase of indole in the upper half of the small intestine was observed, it was greatest after consumption of meat, less after consumption of milk and whey, and least after the consumption of sour milk. This is an indication of the increased production in the small intestine of decomposition products usually formed chiefly in the large intestine. Increased resorption of these toxic decomposition products and of bacterial toxins by the highly resorptive small intestine favored by mechanical and chemotoxic injury to the intestinal wall, may be the cause of the dyspepsia enteritis anemia and general disturbances sometimes seen after gastric resection. Following gastric resection a limitation of food proteins and substitution of a milk and vegetable diet are recommended to withdraw from the pathologic intestinal flora the nutrient medium supplied by the insufficiently digested protein.

Wiener klinische Wochenschrift, Vienna

46 929 960 (July 28) 1933

- Short Wave Therapy P Groag and V Tomberg—p 929
*Serologic and Allergic Reactions of Scleroma E Neuber—p 935
Pathogenesis of Multiple Primary Tumors W Baumgartner—p 939
Provocation of Ulcerotuberculous Cutaneous Processes by Influenza J Fischl—p 941
Agranulocytosis Following Medication with Acetarsone in Course of Angina Lymphocythæmica W Haberfeld and M Rudolph—p 947
Experiences with Perparin (Synthetic Papaverine like Substance) D Fittinger—p 946
Intestinal Infantilism R Priesel—p 947
External Otitis H Frey—p 951

Serologic and Allergic Reactions of Scleroma—After discussing the progress of the serologic diagnosis of scleroma by means of complement fixation and agglutination reactions, Neuber reports favorable results with allergy reactions. The antigen was prepared by Adam's method. A suspension of scleroma culture (one loopful to 1 cc of distilled water) is desiccated and pulverized. To this is added 0.5 cc of sulphuric ether, which is evaporated over the water bath. The residue is dissolved in phenolized physiologic solution of sodium chloride in the proportion of 1:20. Intracutaneous tests gave excellent results from the standpoint of specificity. In most cases twenty-four hours after vaccination with 0.1 cc of the scleroma antigen, an edematous hyperemic areola, 1 cc in diameter appeared at the site of vaccination and usually gave way to a sharply circumscribed infiltration after six or eight days. Around the vaccination sites of heterologous antigens, such as those of *Bacillus mucosus capsulatus*, *Bacterium ozaenae* and others temporary hyperemic areolae frequently appeared within the first twenty-four hours, but they disappeared at the time when the specific allergic reactions exhibited a particularly strong development. The specificity of the intracutaneous allergic reactions with antigen derived from *Bacterium rhinoscleromatis* is especially valuable in cases in which the disease is located in parts of the body not readily accessible to clinical and microscopic examination or in cases in which facilities for performing serologic reactions are not available. The author points out that the favorable therapeutic results obtained with homologous and particularly with autogenous vaccines in cases of scleroma forcibly demonstrate the etiologic role of *Bacterium rhinoscleromatis* in this disease.

Ugeskrift for Læger, Copenhagen

95 819 832 (July 27) 1933

- *Prevention and Treatment of Disorders of Spinal Cord in Pernicious Anemia E Meulengracht—p 819
*Treatment and Diagnosis of Pernicious Anemia A Norgaard—p 825
Senile Marasmus L C Stage—p 827

Disorders of Spinal Cord in Pernicious Anemia—Meulengracht has found desiccated stomach more effective than liver or liver extract in pernicious anemia, especially in protecting against myelopathic symptoms and in their treatment. He emphasizes that the myelopathy is not an inevitably progressive disorder but may be checked under certain conditions improved or apparently cured. He cautions against under dosage in pernicious anemia and points to the danger of reducing the dose during a period of remission, when he has seen grave myelopathy develop in two weeks. As high a maintenance dosage as possible is urged such as from 20 to 30 Gm of desiccated stomach and from 200 to 300 Gm of whole liver, daily, and in threatening or developed myelopathy he would give from 33 to 40 Gm of desiccated stomach daily, possibly with supplementary subcutaneous injections of injectable liver extract.

Pernicious Anemia—Norgaard asserts that heretofore too small doses of liver preparations seem to have been used in pernicious anemia and that stomach preparations seem generally to be more effective than corresponding amounts of liver preparations. Absolute assurance of recovery or continued good effect can hardly as yet be given, even with massive doses of liver and stomach preparations, although the specific effect is undoubted. As a rule specific treatment with liver or stomach should not be started before the diagnosis has been verified by the history and by examination of the blood, the gastric secretion, the mucous membrane of the tongue and the nervous symptoms. After the diagnosis has been made, treatment should be massive.

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ORGANIZATION OF THE ANESTHESIA SERVICE OF THE GENERAL HOSPITAL

CHAIRMAN'S ADDRESS

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Under the apprentice system of medical education as practiced in the past generation, instruction of his students in methods of administration of anesthetics was an important duty of the preceptor. The preceptor performed this duty well, supervising the work of the students until it was done to his satisfaction. When, at the beginning of the present century, the apprentice system went out of vogue and the duties of the preceptor were undertaken by the medical school, provision for instruction in anesthesia was generally neglected. Medical graduates, entering hospitals without instruction or interest in this work, administered anesthetics in a careless and inefficient manner. Search for a solution of the problem of satisfactory anesthesia resulted in the employment of technicians instructed and supervised by some member of the surgical team who had been trained under the former regime. It was early predicted that, after a single generation had passed, this plan would result in a lack on the surgical team of any member competent, from training and experience, to supervise the administration of anesthetics. This is the condition that now confronts the medical profession.

NEED FOR AN ANESTHESIA SERVICE

With few exceptions, medical schools offer no instruction in anesthesia and their teaching hospitals provide the interns with no opportunity for practical experience in the use of anesthetic agents. The outlook is especially dark from the surgical point of view. The present hospital intern is the surgeon of the future. During the years spent in school and hospital he has developed an aseptic conscience which automatically guards him from faults in aseptic technique. A similar appreciation of the powers and limitations of anesthesia is required for the best surgical work.

The surgeon should be competent to make and to evaluate the preoperative examination, to assess the operative risk, to make an intelligent choice from the anesthetic agents, to appreciate the limitations of the chosen agent and to recognize the influence of the anesthetic in the causation of postoperative complications. Lacking this knowledge, he may decide to allow

his technicians to use any agent with which they are familiar, he may discard general anesthesia and make extensive use of spinal anesthesia whether or not indicated, or he may extend the use of regional methods regardless of the feelings of his patients, blaming as uncooperative those who complain of an excess of pain. In the presence of postoperative hemorrhage or infection, he will delay while searching for suspected anesthetic sequelae. When death results from an overdose of the anesthetic, he will attribute the fatality to cardiac failure or surgical shock.

INSTRUCTION OF INTERNS

The medical graduate, before he enters the hospital, has mastered physics, chemistry and the higher mathematics. He has studied anatomy, physiology, physiologic chemistry, pharmacology and pathology. He is fundamentally trained in medicine, surgery, obstetrics and neurology. These studies form the essential basis for intelligent work in anesthesia. To complete a satisfactory course, this knowledge must be collated from the anesthetic standpoint, some features must be emphasized, and opportunity must be afforded for experience in the use of anesthetic agents under skilled supervision. While this training is of value to every medical graduate, it is essential for those who contemplate practice in any one of the surgical specialties.

So large is the proportion of medical graduates who have had no preliminary instruction in anesthesia that the hospital must provide both theoretical and practical teaching for its interns. The system which is here described has been in operation at the Rhode Island Hospital for the past thirty-two years. The course of instruction in anesthesia includes didactic lectures, demonstrations of methods by the staff of anesthesiologists, and administration of anesthetics under supervision. Experience in administration of anesthetics may be gained at any period in the intern's course but preferably not until he has had time to become accustomed to hospital life and routine. The student begins with the simplest methods, straight ether by an open method and nitrous oxide-oxygen for short operations not requiring relaxation. At first his work is constantly supervised, but as he becomes more skillful he may be certified as competent to administer first one and then another agent without immediate supervision. During his anesthetic service the intern should have an opportunity for the use of every anesthetic agent and method that is in routine use in the hospital. Several months is required for this experience.

The aim of the lecture course is to review the features of basic science that have special bearing on the subject of anesthesia to teach the fundamental facts essential to the successful administration of anesthetics to bring out recent advances in anesthesia and

especially to arouse the interest of the student in this subject. For this purpose the lecturers recite interesting cases and personal experiences and may illustrate with lantern slides and motion pictures. Staff lectures provide an important phase of the intern's training and are already provided by 460 of the 696 hospitals approved for interns. The lectures on anesthesia may readily be made as interesting as those coming from any department of the hospital.

SUGGESTED LECTURE SUBJECTS

The following is a list of subjects suggested for lectures

The various anesthetic agents, their physical properties, pharmacology and physiologic effects

The hypnotics

The examination of the patient and the evaluation of surgical risk.

The choice of the anesthetic

The preparation of the patient

Methods of administration and modifications indicated for different operations

The signs of anesthesia

The signs and effects of anoxemia and oxygen excess

The signs and effects of carbon dioxide deficiency and excess

Blood pressure, effects of shock and hemorrhage

Basal metabolism

Effects of posture during and following operation

Spinal anesthesia

Regional anesthesia

Accidents and sequelae of anesthesia

Resuscitation

After-Care

Obstetric anesthesia.

Dental anesthesia

Utility and technic of oxygen therapy

Applied physiology of the circulation and respiration

Reflex nervous activity

An outline of the history of anesthesia may be given as a single lecture or used in parts as an introduction to several lectures. Some of the topics furnish material for several hour lectures.

PERSONNEL OF THE STAFF OF ANESTHETISTS

The chief anesthetist is a member of the hospital staff and has the same authority in his department as the medical and surgical chiefs have in theirs. His appointment is made with the approval of the surgical chief and his department must be managed with sufficient tact to avoid friction with the members of other services. The physician who is competent for this position may well have had some experience in the practice of medicine and surgery in addition to extensive experience in the administration of anesthetics. To keep abreast of the latest developments in his specialty he should study the literature, attend the conventions of anesthetists and keep in touch with the work in anesthesia that is being done in his own and in other centers. He may be a full time officer or may devote a part of his time to administration of anesthetics for private patients while exercising general supervision over his department in the hospital. In any case, he will need one or more assistants to carry on the work in his absence. The chief anesthetist is responsible for administration of anesthetics in the hospital in a manner satisfactory to the surgical chief. The assistant anesthetists have privileges and duties similar to those of the chief but subject to his control.

One or more resident anesthetists may be chosen from recent graduates of the hospital who show special

aptitude for anesthetic work. They supervise the work of the interns under the direction of the chief and administer anesthetics in the more difficult cases. They are interested in working with new agents and in developing new methods. They should have oversight of the preoperative examination and the assessment of operative risk and of the postoperative follow up system. Fourteen hospitals already employ resident anesthetists. Whether they choose to specialize in anesthesia or to take up one of the surgical specialties, the time spent as resident anesthetists will not have been wasted.

EXAMINATION OF PATIENTS

Under the guidance of the visiting and resident anesthetists, the one who is to administer the anesthetic should make the preoperative examination and assess the operative risk. This is done preferably on a day previous to the operation. The results of the examination must be recorded and the record made available in the operating room at the time of operation. It happens too often that examinations made at considerable expense to the hospital are recorded and never seen again. To avoid expensive and distressing errors, the nature of the proposed operation should be carefully recorded, with special attention to which side of the body is affected, as in contemplated eye enucleation, hernia operation or breast amputation.

The student should develop sufficient interest in anesthesia to compel him to attend to this duty rather than to follow minutely the steps of the operation. His interest should lead him to visit the patient frequently during the days following and to record the results of his work.

RECORDS OF ANESTHESIA

Beginning with his first anesthesia, the student keeps a record chart of each administration. This record fixes his attention, provides a graphic view of the patient's condition throughout the operation and opens to view an interesting field for study. The record chart shows the anesthetic agent and the method of administration, the anesthetic dosage recorded at frequent intervals, salient features of the operation, operating room conditions as to temperature and humidity, and the position of the patient with special note of changes in posture. The patient's condition is noted at intervals of from five to ten minutes: the pulse rate, the rate and character of the respiration, the systolic and diastolic blood pressure, the condition of the skin as to color, temperature and moisture, the presence of mucus and of tears, and the state of those reflexes by which the anesthetic zones are minutely gaged. The time when the administration is started and the time when the operation commences and when it is ended are carefully noted. The duration of the anesthesia and of the operation may readily be reckoned and need not be recorded.

The fallacious idea that each hospital should devise record sheets for its individual needs has resulted in much wasted effort in preparing record sheets to fulfill supposedly peculiar conditions. As record sheets are not subject to climatic variation, the chart that is best in one part of the country will be equally efficient in another district. The scientific value of medical records depends less on the character of the individual sheets than on the method by which they are filed and indexed. The isolated individual record loses much of its value as soon as it is completed. Properly filed and indexed, it becomes a unit in a repository of scientific fact. With

the numerical system of filing, the anesthetic record sheet is filed with the rest of the history under the consecutive admission number. Indexing may be done on cards or in loose-leaf books. Under a given title at the head of an index card are listed the admission numbers of all cases falling under this title for a set period. The index may be very simple or may be expanded without limit. From the standpoint of anesthesia, the names of surgeons and of anesthesiologists, the operations, the anesthetic agents, the preliminary hypnotics and the post-operative complications and fatalities are practical titles for the index system. Filing and indexing of anesthetic records should be done by the record room clerks and frequently checked up by the visiting or resident anesthesiologists. A separate record system for each department of the hospital is extravagant and inefficient.

INHALATION THERAPY

Treatment with an excess of oxygen is one of the most valuable therapeutic measures. Resuscitation from the effects of deleterious gases is frequently demanded by the artificial conditions of modern life. When the emergency requiring oxygen therapy or resuscitation arises, the time for preparation has passed. Hospital authorities will consider their duty finished when they have provided expensive resuscitation apparatus, which in inexperienced hands is both inefficient and dangerous. Interns and nurses should be instructed in the operation of oxygen therapy and resuscitation devices and developed into efficient teams by frequent drills. From their familiarity with apparatus and methods of handling compressed gases, the staff of anesthesiologists is best fitted for this work. The anesthesiologists are also frequently called on by other departments for treatment of severe pain. The anesthesiologist knows no pain that he cannot relieve.

ECONOMIC CONDITIONS

In this country the greater number of anesthetics are administered by trained nurses. The work of the nurses with the routine methods that they have been taught is very satisfactory and sets a standard which the efforts of the interns have difficulty in surpassing. The nurses do not advance the art of anesthesia and from their lack of preliminary education in basic science cannot become competent to teach medical students and graduates. As the popularity of nurse anesthesiologists increases, the number of graduate anesthesiologists decreases. Jan. 1, 1932, there were 542 physicians in the United States who limited their practice to or gave special attention to anesthesia as a specialty. March 15, 1933, the number had diminished to 533, this with 6,000 hospitals and 30,000 surgical specialists. This condition is due not to a deficiency in the number of medical graduates nor to a lack of operations for which anesthesia is required but to the economic conditions under which anesthesia is practiced. Medical graduates who choose anesthesia as a life study must be supported either by a stated salary or from fees collected for anesthetizing in private cases. Many hospitals exploit nurse anesthesiologists, employed at a small salary, by charging for their services to private patients fees which are added to the income of the hospital. The more efficient the department of anesthesia becomes the greater is the temptation for members of the surgical staff to utilize the well-trained interns and nurses to administer anesthetics for private patients free of charge. Many physicians still refer operative cases to surgical specialists with an understanding that

the physician shall administer the anesthetic and collect a fee for this service. Knowledge of such practices lowers the morale of the staff of anesthesiologists and will ultimately destroy the anesthesia service, however well organized.

In a hospital in which the staff may treat private patients there should be a list of approved anesthesiologists, physicians at least as competent to administer anesthetics as are the interns and nurses. The anesthesiologists for all operations on private patients should be chosen from this list. Anesthetics should be administered by resident anesthesiologists, interns and nurses only in the ward cases for which the surgeon charges no fee.

CONCLUSIONS

The functions of an anesthesia service in a general hospital are to provide satisfactory anesthesia for the patients and to train the younger practitioners in the art of anesthesia. This training is requisite for recruiting the number of graduate anesthesiologists and for familiarizing the future surgical specialists with a subject that they will constantly encounter in their daily work. A department of anesthesia cannot be conducted without expense, a factor which must be met by the patient, the surgeon or the hospital.

28 Everett Avenue

OTORHINOLOGIC ASPECTS OF SCARLET FEVER

WITH PARTICULAR REFERENCE TO THE SINUSES

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AND

LINUS S. CAVE, M.D.

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This paper deals chiefly with a study of the sinuses in scarlet fever made at the City Hospital for communicable diseases at Syracuse. Interest in this study was aroused by the results of a few x-ray films which were taken in a group of cases of scarlet fever complicated by otitis media. In each instance, the x-ray films disclosed a sinusitis of more or less severity. From this small beginning a series of 292 cases was studied. X-ray films were taken of the sinuses of the patients in this group and were examined for evidence of sinusitis. Certain interesting findings were brought out, and these stimulated an interest for further investigation, so a second group, numbering 80 cases, was selected and a rather intensive study made. In this second group each patient on entrance to the hospital, was examined by the attending pediatrician (Dr. A. C. Siherman) and otolaryngologists (Drs. Hoople and Cave), and as soon as possible thereafter, an x-ray film was taken of the sinuses, which was interpreted by the attending roentgenologist (Dr. D. S. Childs). The findings of each man were recorded independently. The patients were watched during their stay in the hospital and just before discharge they were reexamined and x-ray films were taken. These findings make up the body of this report. In the first series (of 292 cases), no serious attempt was made to check clinically the roentgen findings but the results in this group brought out the advisability of such a

This study was made under the auspices of the Hendricks Research Fund of the Syracuse University College of Medicine.
Read before the Section on Laryngology, Otorhinology and the Eighth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

procedure, hence the careful clinical check in the second series

The findings in the first series have been reported in some detail by Silverman¹ That there may be a proper background for a study of the second group, a summary of the findings in the first series is herewith presented The investigation of the first group was conducted during 1930-1931 To determine whether or not the cases of this group were representative as to age, sex and the season of the year, a comparison was made with the total number of cases in the city of Syracuse during this period

In table 1 it is seen that the total number of cases in Syracuse during the period was 1,205, and in this series, 292 The sex ratio was approximately the same, showing a slightly greater incidence in females in both groups Table 2 giving the number and percentage distribution according to age groups, shows a striking similarity between cases in the city and those in which x-ray films were taken, except for patients under 5 years In a number of cases at the hospital films were not taken because of the difficulty in obtaining cooperation and because the patients were too young

TABLE 1—Sex Distribution in Cases of Scarlet Fever and in Those in Which X-Ray Films of the Sinuses Were Taken

	Total	Male	Female	Ratio
Cases in city	1 205	579	626	1 1 081
Cases in which x ray films were taken	292	140	152	1 1 085

Table 3 shows the percentage comparisons, according to different periods of the year, between the cases in the city and those in which x-ray films were taken There is a fairly striking similarity between the two The bimensual percentage of cases in which x-rays were taken is somewhat coincident with the seasonal variance of scarlet fever

Before discussing the roentgen findings in this and the second group, some explanation of the terminology used seems advisable The roentgen findings were classified according to the shadow seen as follows clear, thickened membrane and retained secretion This is an arbitrary classification, and its limitations are

TABLE 2—Number and Percentage Distribution of Cases of Scarlet Fever and of Those in Which X-Ray Films of the Sinuses Were Taken, According to Age Groups

	Cases in City		Cases in Which X Ray Films Were Taken	
	Number	Percentage	Number	Percentage
Total	1 205	100	292	100
Under 5	186	15 4	28	9 6
5 to 9	544	45 1	134	45 8
10 to 14	236	19 6	59	20 2
15 to 19	79	6 6	18	6 1
20 and over	160	13 3	53	18 3

realized X-ray films were designated as "clear" when no shadow could be made out in the sinuses This part of the classification is simple, but the second presents difficulties and can be questioned However, in both series here reported, x-ray films were included under the heading "thickened membrane" when there was a shadow in one or more of the sinuses, which shadow

was not dense enough to warrant the conclusion that retained secretion was present Finally, when a film showed an opaque shadow, the case was placed under the heading "retained secretion" (The roentgen findings in the first series have been reported by Childs, with the use of a different terminology The classification just described is used with his sanction)

TABLE 3—Number and Percentage Distribution of Cases of Scarlet Fever and of Those in Which X-Ray Films of the Sinuses Were Taken, According to the Time of Year

	Cases in City		Cases in Which X Ray Films Were Taken	
	Number	Percentage	Number	Percentage
Total	1 205	100	292	100
February-March	441	36 6	68	23 3
April-May	420	34 9	111	38 0
June-July	130	10 8	42	14 4
August-September	46	3 8	7	2 4
October-November	47	3 9	12	4 1
December-January	121	10 0	52	17 8

Table 4 is the most interesting one of the first series Ninety-one per cent of the total showed some shadow on the x-ray film, only 9 per cent showed all the sinuses clear The great majority of the shadows were interpreted as being due to a thickened membrane No attempt was made to check these findings clinically, by irrigation or by other methods Some of the shadows were fairly dense and might have included retained secretion At least the great majority of the cases showed a reaction in the lining membrane of the sinuses The sinus most frequently involved was the antrum Following this was the ethmoid and then

TABLE 4—According to Type (Designation of Shadow)

Total		Clear		Thickened Membrane		Retained Secretion	
Num ber	Per cent age	Num ber	Per cent age	Num ber	Per cent age	Num ber	Per cent age
292	100	26	8 9	245	83 9	21	7 2

the frontal The sphenoid was excluded in the examination of the sinuses because of the extra effort in making this exposure and because such a goodly number were in the age group in which a reading would be of little worth

Table 5 shows an incidence of otitis media comparable to that in a number of reported cases There were 33 cases with otitis media among the 292 examined The incidence is 11 3 per cent Ross² has reported on 15 lists of otitis media in scarlet fever, and in most of these the incidence was greater than 11 per cent This table brings out the interesting fact that no ear showed purulent otitis media unless there was sinusitis evident by the x-rays on the corresponding side Conversely, in the cases in which the x-ray films were clear there was no incidence of otitis media In the great majority, 26 of 33 cases, both sides of the nose showed some shadow in the sinuses whether one or both ears were involved

COMMENT ON THE FIRST SERIES
The first series, of 292 cases of scarlet fever in which x-ray films were taken, showed a surprisingly

1 Silverman A C The Paranasal Sinuses in Scarlet Fever J Pediat 1 58 (July) 1932

2 Childs D S The Accessory Nasal Sinuses in Scarlet Fever, New York State J Med 33 141 (Feb) 1933

3 Ross E L Otitis Media in Scarlet Fever Ann Otol Rhin & Laryng 33 1319 (Dec.) 1924

large number of patients who had roentgenologic evidence of sinusitis. This finding was higher than was expected by those conducting the study and called for a more complete investigation in which some attempt would be made to link together the clinical and laboratory evidence. This will be considered in the discussion of the second series. Further interest was aroused when it was found that there was no incidence of otitis media without the presence of sinusitis. This finding was further qualified by the observation that in every case of otitis media there was some involvement of the sinuses on the side of the lesion of the ear. These discoveries led our associates and ourselves to hope that they might be duplicated in another group of cases in which closer clinical observation was conducted. In this first group the cases had been selected primarily for the roentgen study, and the study was continued for a period of more than one year to observe any

TABLE 5—Type of Sinus Involvement (Designation of Shadow) in Cases of Scarlet Fever Complicated by Otitis Media, Relation of Sinus Involvement to Otitis Media

Type of Sinus Involvement and Side Affected						
		Clear		Thickened Membrane		Retained Secretion
		Both	Right Left	Both	Right Left	Both Right Left
Sinuses	33	None		21	7	5
Ears	33	According to Type and Sinus Affected				
Side affected		Both		10		4
		Right		8	7	1
		Left		3		

seasonal variation which might be present. None having been found, save for the seasonal incidence of scarlet fever itself, the second study was begun immediately, and a group of 80 cases was observed.

Table 6 needs but little comment. The cases, as will be noted, were studied in the first three months of the year. The percentages in the age groups and the division between the sexes are not unlike those in the first series. The percentage of cases of the severe type was considerably less in this group—75 per cent against 20 per cent in the other—which offsets the influence that might be present by selecting these cases from the first fourth of the year. This is a factor

TABLE 6—Eighty Cases of Scarlet Fever Studied for the Condition of the Sinuses

Age			Sex		
Under 5	6	Male	26		
5 to 9	23	Female	44		
10 to 14	23	Ratio	11	22	
15 to 19	11				
20 and over	15				
Time of Onset			Type of Disease		
December	3	Mild	41		
January	27	Moderate	33		
February	24	Severe	6		
March	16				

which should be considered, for in the first series less than 2 per cent of the severe type of cases showed clear sinuses.

Table 7 is interesting not only for the findings from the original x-ray film, but for those from the subsequent one. The first x-ray film was taken as soon as it was convenient after the patient entered the hospital. In the majority of the cases it was made shortly after the onset of the illness. A few of the patients did not enter

the hospital until a week or more from the beginning of the scarlet fever. The second x-ray film was taken at the end of the period of isolation, usually on the twenty-eighth or twenty-ninth day.

Twelve of the eighty patients showed a clear x-ray film at or near the onset of their illness. However, five of them showed involvement of the sinuses at a subsequent time, leaving but seven who showed clear

TABLE 7—Designation of Shadow

	Clear	Thickened Membrane	Retained Secretion
First x-ray film	12	61	7
Second x-ray film	22	36	2

* Five of the originally clear sets were reported involved in subsequent roentgen examination.

sinuses throughout their illness. Thus, in the second series 91 per cent of the patients had roentgen evidence of sinusitis, which corresponds closely with the percentage in the first group.

Perhaps a more surprising finding is the result of the so-called "discharge x-ray" film. That so many should show involvement four weeks after the onset is enlightening. One immediately wishes to connect these findings with the clinical observations to determine the possible epidemiologic significance. This point will be discussed later in the paper. What should be noted here is that many of the patients who showed thickened membrane or retained secretion were not discharged at the end of the usual period of isolation. The discharge examination was more carefully made, and these cases were observed until there was no clinical evidence of further infection.

Before a comparison between the roentgen evidence and the clinical findings is made, it should be recalled

TABLE 8—Designation of Shadow, Clinical Examination

	Clinically Positive	Clinically Negative
Clear	12	7
Thickened membrane	61	46
Retained secretion	7	4

that the findings of the otolaryngologist and roentgenologist were recorded independently. The report of one was not read by the other until the findings of both had been placed on the patient's chart. This procedure gave interest to the comparison between the roentgen and clinical findings, which is given in table 8.

It is easy to understand that a clinical examination at any one time may not reveal sinusitis. All otolaryngologists have had this experience. Another examination a few hours later, or a day apart, may give the evidence for which one is searching. This is a possible reason why there are eighteen cases (fifteen in the group with thickened membrane and three in the group with retained secretion) in which the results of clinical examination did not support the roentgen evidence. On the other hand, there were seven cases in which the clinical evidence was such that the diagnosis of acute sinusitis appeared to be justified, yet roentgen examination of the sinuses reported them all clear. A more careful study of these cases, together with those which remained clear roentgenologically throughout their illness, is included in table 9.

It should be noted that the patients in the twelve cases which thus stood out because of clear x-ray films were with one exception 7 years of age or older. The

one exception was an interesting case. The initial infection apparently was mild, but a secondary attack of scarlet fever developed and the patient was desperately ill for many weeks. It has not been brought out in any table, but the percentage of clear sinuses in both series was much higher in the older age groups than in the younger.

In seven cases the x-ray films were clear on both the first and second examinations. In three cases clinical examination gave negative results, and in four, positive results. All but one of the patients were in the second

TABLE 9—Study of the Details of Patients with Clear X-Ray Films

Case	First X-Ray Film	Second X-Ray Film	Clinical Examination	Tonsils and Adenoids	Age
1	Clear	Clear	Negative	Present	13
2	Clear	Clear	Negative	Present	10
3	Clear	Clear	Negative	Present	8
4	Clear	Clear	Positive	Present	10
5	Clear	Clear	Positive	Present	10
6	Clear	Clear	Positive	Present	10
7	Clear	Clear	Positive	Present	18
8	Clear	Shadowed	Negative	Present	3
9	Clear	Shadowed	Negative	Absent	7
10	Clear	Shadowed	Positive	Absent	16
11	Clear	Shadowed	Positive	Present	8
12	Clear	Shadowed	Positive	Present	7

or third decade of life. Seven cases were positive clinically but showed clear x-ray films on the first examination. The tonsils and adenoids were present in six of the seven patients. This suggests a possible source of the mucopurulent discharge which was found on clinical examination.

Twelve cases, or 15 per cent of the group, were complicated by otitis media. It will be seen from table 10 that there was no involvement of the ear without involvement of the sinus, and in every case but one, the involvement was on the same side as the otitic lesion. In this exception, both ears were involved, but

TABLE 10—Twelve Cases Studied for Complications of the Ears and for the Condition of the Sinuses

Involve-ment of the Ears	(Otitis Media)	X-Ray Film of Sinuses	Results of Clinical Examination
Both ears	(Second opened 3 days later)	Left maxillary	Negative
Both ears		Both maxillaries both ethmoids	Positive
Right ear	Two	Both maxillaries	Positive
Right ear		Right maxillary and ethmoid	Positive
Right ear		Both maxillaries left ethmoid	Positive
Left ear	Three	Both maxillaries both ethmoids	Positive
Left ear	Two	Both maxillaries	Positive
Left ear		Pansinusitis	Negative

the second ear was opened three days after the x-ray film was taken. As a second film was not taken, we do not know the condition of the sinus at the time of involvement of the second ear.

Only two of the cases of otitis media were clinically negative for evidence of sinusitis. In both instances the tonsils and adenoids were present. Two of the twelve patients had had their tonsils and adenoids removed.

None of the twelve cases required mastoidectomy. This fact precludes a discussion of that condition so far as this study is concerned.

For the purpose of further comparison, the series was divided into tonsillectomized and nontonsillectomized cases. As would be expected, the latter predominated. There were sixty-two of these, while eighteen patients had had their tonsils and adenoids removed. Aside from the evident increased incidence of scarlet fever and the greater involvement of the ear, the presence of this lymphoid tissue seemed to have little effect on the findings in this investigation. There were proportionately fewer mild cases in the tonsillectomized group than in the group with tonsils. It is true that the severe cases in the group with tonsils outnumbered those in the other group five to one, but as the difference between the two groups is more than three to one (in a small series such as this), this fact is not outstanding. It is interesting to note that the incidence of sinus involvement was not less in the tonsillectomized group, it was, in fact, proportionately greater.

COMMENT

It is realized that no acknowledgment has been made of the factor which chronic sinusitis might prove to have been in the formation of the various shadows seen in the two groups of cases. That it might be a factor is not denied, yet it is doubtful whether such an incidence as is brought out in this study could be found in any series. This report would be more complete and the conclusions more certain if a comparative series of x-ray films of normal persons of the same age groups and with the same seasonal variations could be included. It is our purpose to do this at a later period. In fact, the findings of this study suggest the value of a similar investigation in cases of influenza, measles and other infections of the upper respiratory tract. The history of chronic sinusitis was obtained in a few instances, but the lack of real understanding of this condition, especially in children as reported by their parents, precluded any reliable information on which to base some estimate of the prevalence of chronic infection in these cases. In the end, however, it makes but little difference whether or not a chronic condition is present. What has attracted our attention is the amount of sinus involvement in cases of scarlet fever and its possible significance.

A practical application of these findings is in the matter of contact cases. If there is a rather high percentage of sinusitis at the end of the usual period of isolation, a real responsibility rests on those who are entrusted with the final discharge of the patients. The responsible party, if not an otolaryngologist, should be well trained in the examination of the nose and throat. The question naturally arises, What significance should be placed on a sinus with thickened membrane at the time of discharge? Are all such sinuses sources of contamination, or does the thickening of the membrane represent only a residual reaction to the past infection something that will subside in a few more days? It is difficult to answer these questions with certainty, for it seems that one cannot condemn all patients any more than one can exclude every one. If they were all possible sources of infection, then the incidence of contact cases would be enormously high. Yet, because we have seen several patients who were probably infected from released patients of this series, whose sinuses showed thickened membrane, we believe that the patients can not be released without careful scrutiny. The value of a so-called discharge x-ray film is herewith suggested. While the finding of evidence of sinusitis in all cases of otitis media is interesting, it does not seem to possess

any practical value save perhaps in the field of prevention. Any patient with known sinusitis should be properly cared for and should receive such instruction as may be deemed advisable. This raises the question as to the methods of treatment employed in these cases. There was little done aside from ordinary cleansing. None of the group of eighty patients required special sinus treatment. As little as possible was done in the acute stages, and it was found that little needed to be done in the later periods.

SUMMARY AND CONCLUSIONS

1 Two series of cases of scarlet fever were studied, the first chiefly by roentgen examination, in the second, an attempt was made to correlate the clinical and roentgenologic findings.

2 In both series, roentgen evidence of sinusitis was present in approximately 90 per cent of the cases.

3 The clinical examination failed to support this evidence in every case.

4 There were 33 cases of otitis media among 292 patients in the first group, and 12 in the second series of 80 patients. In all of these there was roentgen evidence of sinusitis, and in all but 1 there was involvement on the side of the infected ear.

5 Without desiring to draw unwarranted conclusions in the absence of control studies, the question is raised as to whether or not sinus involvement is the rule rather than a complication.

ABSTRACT OF DISCUSSION

DR IRVING I MUSKAT, Chicago. In 1929, Fowler reported 100 cases of diseases of the ear in children with involvement of the sinuses in 80 per cent. In 1932, Campbell observed coexisting acute purulent sinusitis in many hundreds of cases of acute purulent otitis media in infants and children. Since purulent otitis media has always been known to be a frequent complication in scarlet fever, it was logical to stress the relationship between sinus disease and acute purulent otitis media in this disease. Silverman in July, 1932 published similar observations. In 292 patients with scarlet fever 91 per cent showed hazy or opaque sinuses and all thirty-three patients with otitis showed abnormal sinus shadows while no patients with clear sinuses had any aural complications. The frequent association of sinus disease with suppurative otitis media in children and infants is due to various causes. First any secretion in the nasopharynx is forced up into the middle meatus and sphenoidal recess by the act of crying, sneezing, coughing, regurgitation or vomiting. The middle ear and the nasal sinuses are more vulnerable to infection in the young, because of the wide eustachian tube and the relatively wider sinus openings. The same relationship exists in the common head cold. I believe it is difficult to state which precedes the other. It may appear reasonable that with the severe nasopharyngitis in scarlet fever the eustachian tube and middle ear become infected before the nasal chambers do while in the common frequent rhinitis the ear is secondarily infected. There is also a marked seasonal variation in the occurrence of scarlet fever and its complications. The greatest incidence seems to occur from the middle of January to the middle of May. The concurrence of another exanthem, especially measles with scarlet fever also increases the incidence of aural and nasal sinus complications. The incidence of these complications decreases with increase of age. Observers differ as to the time of the occurrence of the otitis. Usually it manifests itself after the first five days of the disease. The data of Williams and Borden support the belief that aural complications of any degree of severity may arise at any time from the first day of the acute symptoms to the last day of convalescence. Early daily applications of mild silver protein or some other good antiseptic in the nose and throat tend to decrease the incidence and virulence of these complications. The streptococcal infection in scarlet fever is of a virulent type and such prophylaxis will probably be of no avail in averting

these complications in all cases. Suction of the nose in suppurative sinus disease, after shrinkage and early paracentesis of the infected ear should tend to lessen the course and severity of these complications.

DR HORACE R LYONS, Chicago. The authors presented a comprehensive study of a series of cases of scarlet fever. In the first series of 292 cases, 91 per cent showed one or more sinuses with positive roentgen signs. The antrums were most often involved. 113 per cent had acute otitis media and each of these patients had positive x-ray signs of a sinus infection on the same side, less than 2 per cent of the severe cases gave negative roentgen evidence of sinus involvement. The second series of eighty cases revealed that 91 per cent presented positive x-ray evidence of infected sinuses, 15 per cent of the patients had acute otitis media, all of whom likewise showed positive sign of sinus infection, and all but one had positive definite roentgen evidence of involvement on the same side. There were no instances of mastoiditis requiring surgical intervention. The real point revolves about the interpretation placed on the conditions observed. I do not believe that 91 per cent of scarlet fever patients have acute purulent sinusitis, yet I do not doubt that 91 per cent in this series presented positive roentgen signs of an infected sinus. Further, I do not believe that all cases of acute otitis media complicating scarlet fever presented acute sinusitis, yet I do not doubt that positive x-ray evidence was obtained in each. I prefer to believe that most of the x-ray evidence of sinusitis is due to the profound toxemia of scarlet fever and not to a true bacterial sinusitis.

DR O JASON DIXON, Kansas City, Mo. The authors have brought out an important point not to rely on the roentgen observations in the nasal accessory sinuses as a positive indication for surgical intervention. This is true also of roentgen observations in the sinuses in other diseases than scarlet fever. I was at one time enthusiastic over the radical treatment of the sinuses in scarlet fever, but I have decided to let them alone, because most patients get along better if not disturbed. In scarlet fever the sinuses become as much a part of the disease as the rash. Disease of the bone always develops more slowly than disease of the soft tissues, and there is no indication for radical intervention at the height of the acute infection. When surgical intervention is necessary, I do a two stage operation, the same as in mastoiditis with postauricular abscess. Under local anesthesia I drain the soft tissue abscess and leave the bone alone until the infection has subsided and the patient is over the acute attack. Scarlet fever patients do not do well under ether anesthesia, they are prone to serious complications such as nephritis or pneumonia. Local treatment does but little good. Since local treatment is done more to satisfy the patient and relatives than to cure the disease the ideal medication is mercurochrome or anything that makes a mucus stain. Cocaine, ephedrine or epinephrine should not be used. Orbital cellulitis, owing to leakage from an adjacent sinus, may simulate cavernous sinus thrombosis or meningitis. Positive roentgen observations at this time should not prompt one to undertake any emergency surgical measures that necessitate extreme trauma to acutely inflamed soft tissue. Such misdirected efforts may be the cause of actual and serious intracranial complications that were only apparently present. The virulence of the organism and the point of attack vary with different years. I rarely lose a case of scarlet fever. I think it is a much overrated disease. I do not think the serum therapy has anything to do with it.

DR EDWARD D KING, Cincinnati. Carmody in a report of sinus infection in children has found x-ray evidence of disease in very early cases. He states that x-ray evidence of sinus infection will not be found when the infection is confined to the surface of the mucosa. With the severe infection that accompanies scarlet fever the deeper structures will be involved and hence x-ray evidence of the infection will be present in almost every case. Very studied the sinuses of 100 children referred for tonsil and adenoid operations and found that from the roentgen ray and clinical aspects 16 per cent were diseased. Dixon has examined 500 consecutive medical cases and found 27 per cent giving positive x-ray signs of sinus infection. The author directed attention to the fallacy of concluding that x-ray evidence of sinus disease is sufficient. It must be proved clinically. Hubbard in 1912 called attention to the frequency of

sinus infection in scarlet fever. He felt that every scarlet fever case was potentially a sinus infection. Most authors have expressed the belief that sinus infection is a common complication of scarlet fever. Baumbler, a German author, has come to the conclusion that sinusitis is the cause of from 20 to 40 per cent of the complications. The problem facing those in charge of the dismissal of these patients from quarantine is a serious one. It is conceded that from 2 to 10 per cent of patients discharged from quarantine will account for return cases. There is no way of distinguishing the scarlet fever streptococcus from other streptococci and hence cultures are not of great value. The period of infectivity is so much longer in scarlet fever than it is in any other contagion that one never knows when the patient is free from danger of transmitting the disease. It is my opinion that the sinus infection plays a major role in the prolongation of the infective period.

DR. GORDON D. HOOPER, Syracuse, N. Y. A point emphasized by several who have taken part in the discussion is that, while 90 per cent of these cases show x-ray evidence of sinusitis this does not connote a purulent condition in each case. On the other hand, four cases in the thickened membrane group in the second series were apparently responsible for a similar number of contact cases. This places a significance on the finding of thickened membrane by x-rays which cannot be denied. I feel that this necessitates more care in the discharge procedure in these cases.

GENERALIZED EDEMA OCCURRING ONLY AT THE MENSTRUAL PERIOD

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In enumerating the factors concerned in edema, one has come to recognize (though not always to explain) a number of conditions most commonly associated with the phenomenon, such as alterations in chemical and mineral balance, metabolic disturbances within the tissues, changes in colloidal state of dispersion, quantitative and qualitative changes in serum proteins, or endocrine dysfunction, and is able at times to deal empirically with the conditions and to obtain satisfactory results.

Occasionally, however, one encounters situations entirely unique in so far as these recognized factors are concerned. It is the purpose of this paper to present two cases of generalized massive edema occurring only at the menstrual periods. As originally presented, the theme of the paper was edema, but the neurologic and gynecologic phases so overwhelmed the picture, and the internists had so little to contribute, that its appearance in this section is not unnatural.

The first case has been under careful and critical observation since 1926. When I described the condition last spring, a somewhat similar case was referred to me by an associate in the department of gynecology, and it is this case, less complete, that I shall describe first.

REPORT OF CASES

CASE A.—The patient was seen in April 1933, at the age of 29, with a baby 2 months old. Labor had been induced at seven months because of high blood pressure and albuminuria. The blood pressure formerly had been low.

For two years preceding this pregnancy, at each menstrual period and during the one period since, she had gained from 10 to 12 pounds (4.5 to 5.4 Kg.). She had a decreased urinary output, a severe bitemporal headache, blurred vision, vomiting and unusual behavior with swelling of the face, body and feet. Following this there was profuse polyuria (frequently 4 or 5 quarts in a day) with a rapid return to normal.

Her medical history is unusual. She weighed 100 pounds (45.3 Kg.) at marriage, gained 60 pounds (27.2 Kg.) in twelve months, lost 30 pounds (13.6 Kg.) on a diet and thyroid medication and weighed 145 pounds (65.7 Kg.) when last examined. Her basal metabolic rate was always found to be normal, but she never sweat as a child, and she felt worse following thyroid medication. Her periods were always irregular, varying from three to six months apart, and lasted only one day. She was given pituitary substance by hypodermic in Los Angeles for a year.

I observed her during only one cycle, the variation in weight shown on my office scales being 8 pounds (3.6 Kg.), the day following the onset of her diuresis. Owing to her financial difficulties (inability to procure a nurse) and the distance to the suburb in which she lived, I saw her only a few times before she moved to another city. A roentgenogram of the sella was normal in configuration, but the horizontal measurement was 9 cm., the very lower limit of normal.

The case first reported, however, is more satisfactory.

CASE B.—This patient is now 38 and has one child, aged 14. I have seen her in the office since 1922, and the present condition began in 1926. There is nothing significant in her family or past history except that a few months before, she accidentally cut both wrists in pushing a window closed, and was practically exsanguinated. Since then at each period she exhibited a typical picture, with edema, and a gain of weight reaching 11, 12 or even 14 pounds (5 to 6 Kg.). The edema was generalized, involving her face, body and legs. Vision was blurred at times almost absent. Examination of the eyegrounds showed marked choking of the disks. Headache was severe, referred to the interior of the skull and unrelieved by ordinary medication. The spinal fluid was clear, unaltered from normal and under markedly increased pressure. There was profound prostration, with nausea but no vomiting. Recovery in all these respects was rapid, a diuresis of 4,500 cc. in twenty-four hours was not unusual, and in the intervals she was well and active.

Observations carried on both at the time of the edema and in the intervals revealed no deviation from normal. There was no albumin in the urine except an occasional trace at the immediate onset of diuresis. The chemical observations on the blood were unaltered except for a general concentration of all constituents, often from 10 to 12 per cent. Functional tests of all types gave normal results.

The factors influencing this cycle unfavorably were: 1. Chilling. Regardless of other factors, if the patient became cold or chilled preceding the period the manifestations were aggravated. 2. Infection. The usual respiratory types always caused an increase in the edema. 3. Fatigue. If this occurred shortly before the menstrual period, the condition was aggravated.

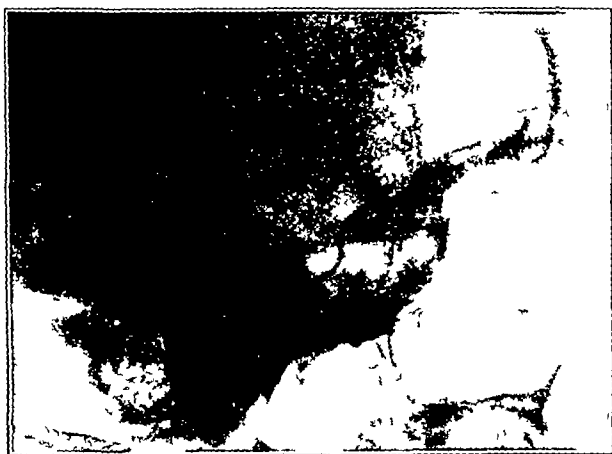
For several years I labored to reduce the severity of the condition. With rest in bed and warmth for several days and liberal use of calcium (at first the lactate and later gluconate) the manifestations were not too severe, granted the absence of any aggravating factors. In 1931 she developed severe menorrhagia and progressive secondary anemia. In October, 1931, at operation, a chocolate cyst of one ovary and a degenerative process in the uterus were revealed. Hysterectomy and unilateral ovariectomy were performed. After convalescence, the identical clinical syndrome recurred. At this time there was enough current information to suggest roentgen examination of the sella turcica. Dr. Hollis E. Potter found a most unusual condition, which he had not encountered previously. The sella was normal in size and shape. At the base there was an oval area of translucency surrounded on all sides by a sharply demarcated zone which was semidense as compared to the clinoids—perhaps a calcification.

With this as a starting point, I gave the patient hypodermically a preparation of the anterior pituitary, with what appeared to me some success. However, newer preparations appeared and I tried a purified form of the anterior pituitary like sex hormone isolated from the urine of pregnant woman and the substance responsible for the Aschheim-Zondek test. The results were spectacular, for when this preparation was used, the edema was absent or present only in minor degree. The systemic evidences of menstruation recurred regularly. On the tenth, third and first days preceding the presumed period 1 cc. of this preparation was given for four months, with com-

plete absence of edema. Last summer I allowed three months to elapse with very little administration of the preparation mentioned. The first two periods were normal. The third resulted in a gain of 4 pounds (1.8 Kg.) and moderately severe manifestations of edema. Resumption of the former dosage successfully controlled the subsequent two periods. Then a preparation she had carried with her during the summer, at this time three months past its expiration date allowed only minor swelling the first month, with quite severe symptoms the second month. Evidently there was some accumulative benefit from the previous two series of potent extract but none from the out-dated product. At present I am decreasing the dosage, with the hope of producing eventual independence, as I mistrust collateral results of excessive or prolonged administration of this substance.

COMMENT

Concerning the theoretical aspects of these observations, I do not feel at all secure, and prefer to present the results and clinical picture as I have observed them. However, the migraines of menstruation, as numerous discussions bring out, are in many respects similar. At first I felt that there was the action of a diuretic substance of the anterior lobe. This is quite opposed to the constant diuresis that occurs about three days following



Sella showing oval translucent area at the base surrounded by a semidense zone probably calcification

delivery, at the time this substance disappears from the urine. The antidiuretic principle of the posterior lobe is well known and used in diabetes insipidus. It has been suggested that this clinical picture is the antithesis of diabetes insipidus. More confusing still is the definite information, brought out recently, that this substance obtained from the urine of pregnant women is of placental, not pituitary, origin. Possibly it is another prohormone activating the anterior pituitary or opposing the antidiuretic activity of the posterior lobe. I feel, however, in respect to my original theme that however complex and interrelated these processes may be, the end-results—edema and diuresis—are functions of tissue thirst, depending on hydrophilic tissue states or the reverse, that is extrarenal factors rather than any alteration in renal function.

122 South Michigan Avenue

ABSTRACT OF DISCUSSION

DR. GEORGE W. HALL, Chicago. As far as I know, there is nothing in the literature that corresponds in any way with the two cases that Dr. Thomas has just reported. The neurologic examination at the time I saw the patient presented nothing abnormal. Although Dr. Thomas has brought out that on occasions one of his patients had a definite papilledema

during these attacks, the interesting thing is that it occurred at the time of menstruation. The history of this case suggests that the condition may be related in some way, to certain types of migraine. The best monograph on migraine has been written by Riley of New York and has been followed by a paper by Riley and Brickner, in which thirteen cases of migraine were studied closely. Of the thirteen patients, eight were menstruating women, and seven had attacks of migraine only at the time of menstruation. Apparently there is some relationship between menstruation and the attacks of migraine. The authors were attempting to work out the relationship between the attacks of migraine and the presence of prolactin in the urine. Although they have come to no definite conclusions, they have shown the possibility of the relationship in these patients between the anterior pituitary secretion and the ovarian secretion. The internist is inclined to interpret this condition on some allergic basis, but it seems to me that there is a relationship between the endocrine secretions that has not been properly worked out.

DR. EDWARD ALLEN, Chicago. Not only is this report an important contribution to the problems of edema but it reemphasizes the importance of the cyclic changes of metabolism that occur in women with the menstrual function. Dr. Thomas does not offer an explanation why this substance when injected into his nonpregnant subjects should produce such a marked diuresis, while the pregnant individual continues to retain increasing amounts of fluid in her tissues at the same time that she is excreting excess quantities of the same material. Explanation of this discrepancy may reveal the underlying cause of all edema. Barnes of the University of Chicago found that injections of an anterior pituitary extract into normal dogs produces a marked diuresis. When the thyroid is removed, increased excretion of urine does not occur. The close relationship between the pituitary, the thyroid and the gonads is well established. Dr. Thomas has previously emphasized that the edema which occurs in nephritis is a disturbance of general cellular metabolism rather than a lesion of the excretory apparatus of the kidney. Zondek, Jeffcoate and others have recently reported increased amounts of prolactin A excreted in the urine of patients afflicted with fibromyomas and carcinoma, and especially in genital cancer. I have recently been able to produce changes in cell type of transplanted pelvic tissues in rabbits by the prolonged administration of glandular extracts. Under these circumstances tubal epithelium tends to assume the histologic characteristics of cervical mucous membrane. The secretory cells of the endometrium take on many of the cytologic trademarks of tubal epithelium, and in a few instances the follicular epithelium is distinctly abnormal. I have under observation now several rabbits with ovarian tubal and endometrial tissue transplanted into the anterior chamber of the eye, which have received daily injections of glandular extracts for a period of two months. There is marked evidence of cellular activity and growth in several of these transplants. Carefully controlled clinical experiments like the one Dr. Thomas has reported are of the utmost importance, but the indiscriminate use of the active glandular extracts should be stopped until more is known about them.

DR. WILLIAM A. THOMAS, Chicago. I have no further remarks, except that I think Dr. Allen is rather modest in reporting his work. There is a good deal of evidence from his laboratory, and from others, that there is a tremendous tissue stimulation as a result of the use of these substances and it does look as if there may be some approach to the understanding of uncontrolled growth of tissues, either benign or malignant, with the excessive presence of these substances either given artificially or formed in the body.

Fat in Blood of Diabetic Patients. Fat is a far more insidious factor in the blood of a diabetic than is sugar. If the sugar in the blood increases it is reflected in the urine and makes itself known by polydipsia and polyuria. An increase in fat in the blood clinically may escape notice for weeks, months or even years.

Diabetic coma is the outstanding complication which is usually associated with increased fat in the blood for convenience recognized and estimated by us chiefly as cholesterol.—JOSLIN E. P. Fat and the Diabetic, *New England J. Med.* 209:519 (Sept. 14) 1933.

MANAGEMENT OF THE THIRD STAGE
OF LABORL. A. CALKINS, M.D., PH.D.
KANSAS CITY, MO

The proper management of the third stage of labor has received comparatively little real investigation either by research workers or by clinicians. Numerous studies of postpartum hemorrhage have been made, and considerable progress toward prevention and improved treatment has resulted. Almost without exception, however, various writers have failed to recognize that a large proportion of all obstetric patients offers the opportunity to prevent moderate hemorrhage. One textbook on obstetrics lists some twenty-five possible causes for postpartum hemorrhage and then goes on to say that a fairly large proportion of cases of hemorrhage does not fall into any one of these twenty-five categories. In other words, hemorrhages can and do occur in the absence of any one of the known causes. Moreover, a comparatively large loss of blood (not enough to be classified as "hemorrhage") is frequently passed by without much thought as to its etiology. There can be but one conclusion: The technic of management of the third stage of labor, as generally practiced, is deficient with respect to its control of blood loss. Litzenberg has taught that 90 per cent of postpartum hemorrhages are preventable, the inference being that the occurrence of postpartum hemorrhage is presumptive evidence of faulty management. My purpose in this paper is to show not only that 90 per cent of postpartum hemorrhages can be prevented but to show that 90 per cent of moderate losses of blood can be reduced to a minimum and that not over 10 per cent of all patients should lose in excess of 300 cc of blood in the third stage of labor. The importance of reducing blood loss and the consequent saving in mortality and morbidity is so evident that it requires no further emphasis.

Various estimates and (or) averages have been quoted in the literature covering the general experience of blood loss in various clinics. These figures are not entirely convincing because of the lack of description of the method of arriving at the amount of blood, and it remained for Williams¹ to point out the necessity of actually measuring the blood loss if one is to have any real idea as to the results. Williams' technic is as follows: "Immediately after the birth of the child, a sterile douche pan is placed under the buttocks of the patient, where it remains until all bleeding following the birth of the placenta has ceased. The entire amount is then poured into a graduate and actually measured in cubic centimeters and noted in the history." Litzenberg has further improved on this technic to the extent that he recognizes that not all the blood can be caught in a pan and that the linen, sponges and the like will naturally remove a considerable additional amount that cannot be measured in a graduate. This additional amount is estimated and added to the collected blood, and the whole amount, thus arrived at, recorded on the chart. One cannot emphasize too strongly the impor-

tance of both measuring and recording the amount of blood lost, for without this practice one regards the loss at only one-third to one-half the actual figures.

Williams¹ reported 1,000 consecutive spontaneous deliveries at full term with an average loss of 343 cc. of blood. He purposely eliminated the operative deliveries and premature deliveries and, by so doing, presented figures that do not represent a true cross section of all deliveries. Three thousand and two cases from Litzenberg's clinic, previously reviewed, demonstrated an average blood loss of 462 cc. This series included operative deliveries and premature deliveries as well as normal full term deliveries and, therefore, more nearly represents a true cross section of obstetric experience. This average figure also included the "estimated" in addition to the "measured" loss of Williams. It is quite in line with De Lee's estimate of 500 cc, Ahlfeld's 500 cc and Tarnier's 600 cc.

It is probably fair to assume that in most clinics some part of the 500 cc is due to the fact that most of the patients in such clinics are delivered by interns or younger residents. Physicians have quite generally assumed that their own figures would be more favorable because of their skill and experience. In 1,157 privately conducted labors and employing the Williams technic of blood measurement, Plass² had an average loss of 317 cc. This figure, however, is not directly comparable with Williams' average of 343 cc because Plass did not exclude from his series operative deliveries or premature deliveries. Whereas the difference between his average and that of Williams is only 26 cc, the actual saving is probably in the vicinity of 50 cc due directly to the skill of the attendant. Fifty cubic centimeters subtracted from the average blood loss of 450 or 500 cc is an appreciable but not a phenomenal saving. It would seem that some change in the management of the third stage would be necessary to effect a marked reduction in blood loss.

Williams' technic of management of the third stage as described in his textbook³ is as follows:

Just as soon as the child is born, the hand is laid upon the abdomen, and if the uterus be felt as a hard globular mass, it is left absolutely alone. On the other hand if it happens to be soft and flaccid it is gently kneaded until firm contractions are induced. The condition of the uterus is then carefully watched by applying the hand to it every few minutes, but kneading it only when necessary. In the majority of cases, after a lapse of ten or fifteen minutes it is noticed that the fundus rises spontaneously several centimeters above the position which it had just occupied, and at the same time remains firm and hard. This change indicates that the placenta has become separated from the uterine wall and is distending the lower uterine segment or upper portion of the vagina. The placenta is now expelled by grasping the uterus and making a downward pressure in the axis of the superior strait, using the uterus merely as a piston to shove the placenta through the vagina. Immediately following the birth of the placenta, the uterus should again be palpated. Normally it will be found firmly contracted and retracted and (if it remains so) there is no danger of hemorrhage. But, on the other hand if it shows any tendency toward relaxation, it should be kneaded until it contracts, and the hand kept constantly upon it, so that beginning relaxation may be detected and combated. There is usually no danger of relaxation and hemorrhage, providing no signs of it appear during the first hour after the expulsion of

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Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

¹ Williams, J. W. The Tolerance of Freshly Delivered Women to Excessive Loss of Blood. *Am J Obst* 80: 1 (July) 1919.

² Calkins, L. A., Litzenberg, J. C. and Plass, E. D. Management of the Third Stage of Labor with Special Reference to Blood Loss. *Am J Obst & Gynec* 21: 175-186 (Feb.) 1931.

³ Williams, J. W. *Obstetrics*, ed. 6. New York: D. Appleton & Co. 1930.

the placenta. Accordingly the condition of the uterus should be carefully watched during that period by the physician or nurse. While pituitary extract is not necessary, the prompt and vigorous contractions which it induces add somewhat to the peace of mind of the physician and can do no harm. On the other hand, the drug should not be employed so long as the placenta remains in situ for fear that it may give rise to an hour glass contraction of the uterus and thereby unnecessarily prolong the third stage of labor.

This technic may be regarded as more or less standard, as the slight differences recommended by De Lee and others are all of relatively small significance and,

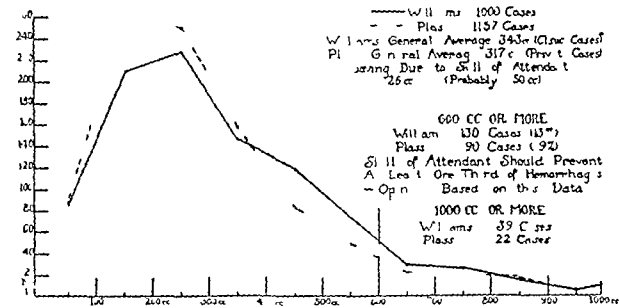


Chart 1—Blood loss in the third stage of labor incidence of various serial amounts

from the figures quoted it seems fair to assume that this technic will produce an average loss of from 400 to 500 cc per patient with average skill of attendants.

At the suggestion of Dr. Litzenberg I modified this technic to the extent that the hand was placed on the uterus immediately after the birth of the baby and *kept there constantly*. The reason for this change is that, not infrequently the patient's uterus may relax very suddenly and very markedly and sometimes in the space of a few seconds. I believe that it is quite as important to keep the hand on the uterus before the delivery of the placenta as afterward, and there is general agreement on the latter point. By carrying out this suggestion I learned that placental separation takes place much earlier than I had formerly supposed. Immediately after the delivery of the baby the uterus contracts and assumes a flattened discoid shape, which is maintained for a relatively short time. The shape of the organ then becomes globular. This change in shape indicates placental separation. I believe that the placenta should now be gently expressed without waiting for the rising of the uterus in the abdomen as that does not take place until several minutes later. It seems fair to assume that in these several minutes in which one is waiting for the uterus to rise in the abdomen a considerable bleeding may take place into the uterine cavity. Nearly all authors recommend that the placenta be expressed as soon as it is definitely separated. At about the time the uterus changes in shape there is also a slight trickle of blood from the vagina. I believe that this indicates separation and while I do not regard it as certainly indicative of more than partial separation that it is confirmatory to the sign of change in shape.

Making use of this modification of Williams' technic I⁴ was able to report an average blood loss of 222 cc for 853 cases. This material reduction in the average blood loss quite substantiates Williams' con-

tention that the placenta should be expressed as soon as it is separated. It seems hardly necessary to reiterate that no attempt at expression of the organ should be made until it is completely separated from the uterine wall. This difference in technic from that recommended by Williams is merely an earlier recognition of separation.

Encouraged by this material saving I have attempted some other modifications of technic one of which seems to have been quite productive of improvement. Having determined that placental separation has taken place, one should not proceed at once to express the placenta but should first massage the uterus quite vigorously if necessary, to insure firm hard contraction and then, by squeezing and downward pressure, expel the organ. This modification materially minimizes the bleeding which otherwise frequently follows immediately on or really with the delivery of the placenta. Adding this slight modification to the technic, I am now able to report an average loss of 179 cc for the last 800 consecutive cases. Nearly all of these patients were delivered by the intern or the resident and yet the average blood loss was within a few cubic centimeters of that of the patients delivered by the staff men who use this technic.

It is important to emphasize the constant contraction of the uterus both before and after separation as well as during and after delivery of the placenta. Periodic relaxation does not seem necessary in the mechanism of separation, either to the promptness or to the completeness of separation.

Inspection of charts 1 and 2 indicates that this saving of blood loss is not merely an elimination of hemorrhages but it is, even more, a reduction of moderate losses (from 200 to 600 cc), as 71 per cent of my patients lost 200 cc or less and 89 per cent lost 300 cc or less. Williams states that a loss of blood exceeding 600 cc should be considered abnormal. I believe that

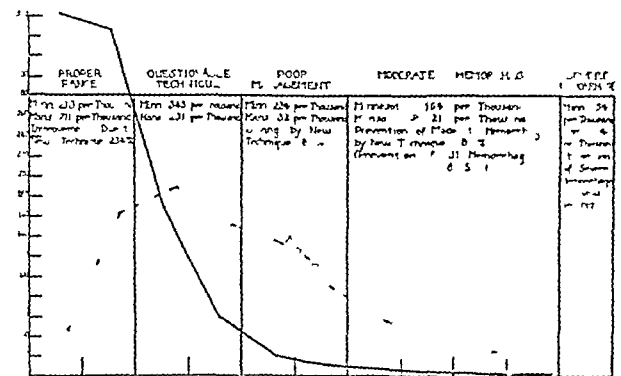


Chart 2—Blood loss in the third stage of labor showing (1) results of new technic of management and (2) necessity of individualizing management

a loss of blood exceeding 400 cc should be considered abnormal. Only 5 per cent of the patients lost more than 400 cc of blood and 2.5 per cent lost more than 600 cc. In Litzenberg's cases 216 patients in a thousand lost 600 cc or more thus by these changes in technic 88 per cent of moderate and large hemorrhages are prevented. Of Litzenberg's patients 221 in a thousand lost between 400 and 600 cc of blood as compared to 33 in the group reported here. A saving of 85 per cent of moderately large losses not ordinarily classified as hemorrhages. Furthermore analysis and

⁴ Calkins, I. A. Factors Governing Blood Loss in the Third Stage of Labor. *Am J Obst & Gynec* 18: 55 (April) 1929.

review of the events associated with the third stage of labor in each individual patient will usually reveal, even to an intern why the patient lost in excess of 300 cc of blood. My associates and I practice such a review for every loss in excess of 300 cc. Finally, I believe that, unless an obstetrician has as a goal in each individual case a blood loss of less than 100 cc, he cannot hope to render his patient the greatest service in this respect.

TECHNIC OF MANAGEMENT

The technic of the management of the third stage of labor might be stated as follows. Immediately after the delivery of the baby, the hand is placed on the abdomen, the uterus is held very gently with the fingers behind and the thumb in front and with no attempt to massage the organ unless it shows signs of relaxation and flaccidity. As soon as it changes from a discoid to a globular shape and a trickle of blood appears from the vagina, the organ is vigorously massaged until it becomes firmly contracted and then, by squeezing and gentle downward pressure, an attempt is made to express the placenta. Should the placenta not come out readily, no further attempt is made to express it and no further massage is instituted until some sign of enlargement or flaccidity appears or there is an increase in bleeding from the vagina. Immediately after the delivery of the placenta, the uterus is again massaged to obtain firm contraction, and the hand is kept constantly in contact with the uterus for a period of one hour or until such a time as the attendant assures himself that there will be no further tendency toward relaxation or flaccidity. One cubic centimeter of solution of pituitary is administered hypodermically immediately after the delivery of the placenta—never before. Whereas I believe that constant moderate (physiologic) contraction is necessary during the separation phase of the third stage, I am in accord with Williams that excessive (pathologic) contraction, as occasionally induced by solution of pituitary, is potentially productive of real pathologic changes. There is an obvious reason why solution of pituitary, given immediately after the delivery of the baby, does not often cause trouble. It requires from seven to twenty minutes to produce a severely hard contraction of the uterus and in the majority of instances the placenta will have been delivered before the expiration of that time.

Employment of this technic of management has resulted in an average duration of the third stage of labor of approximately four minutes; the majority of cases showing completion of delivery of the placenta in one two or three minutes. Although I do not believe that delayed separation of the placenta causes any increase in bleeding, I do believe that delay in expulsion of the organ after its separation does cause increased bleeding. I find that not more than one case in eight will be delayed for as long as ten minutes after the delivery of the baby and that in at least one case in five separation of the placenta is completed within thirty seconds after the delivery. Constant contraction of the uterus both before and after the delivery of the placenta seems to be of major importance in reducing blood loss to minimum figures.

CONCLUSION

Constant attention to constant uterine contraction means controlled blood loss.

406 West Thirty-Fourth Street

ABSTRACT OF DISCUSSION

DR JENNINGS C. LITZBERG, Minneapolis. As women necessarily lose blood after delivery physicians are apt to look on a considerable loss of blood as not particularly significant. If physicians measure the blood that is lost in their obstetric cases they will be surprised at the reduction of morbidity. Dr Calkins has shown that there has been a saving of large quantities of blood. I want to call attention to the author's summary, possibly the shortest on record in medical literature: "Constant attention to constant uterine contraction means controlled blood loss." Dr Calkins has not been presenting something to show that so many cubic centimeters of blood may be saved or to present a technic but to emphasize the idea that the loss of blood in women from childbirth must be reduced to an irreducible minimum.

DR F. J. SCHWARTZ, St. Cloud, Minn. What are the effects of hypnotics used during the first stage on the loss of blood during the third stage, especially of sodium amytal, and what is the treatment?

DR HENRY P. NEWMAN, San Diego, Calif. The former routine of attendance in childbirth consisted in the obstetrician's presence at the delivery and the subsequent oversight of the mother and child for the next ten days. But this is not obstetrics of today. Our responsibility should end only with the restoration of the mother to normal health. In view of the number of deaths from cancer, 100,000 or more yearly, is it not the duty of obstetricians to use every precaution possible? Even in this day of preventive medicine and health supervision it is still true that faulty obstetrics is responsible for many distressing, if not malignant, conditions in women. The frequent abrasions or tears in the puerperal cervix, entirely overlooked by the attendant in many instances, leaving a rough unhealed surface continuously irritated by the catarrhal discharge, constitutes a typical condition for the production of cancer. As a preventive measure I have to offer tracheloplasty, a name given by me to the surgical restoration of the cervix many years ago. This removes the abraded ulcerated surface and by the formation of an anterior and posterior flap, inverted and attached, restores the outlines and function of a normal cervix. What is more important, it lines the endocervical area with an epithelial membrane much more resistant to cancerous invasion.

DR E. L. CORNELL, Chicago. I was surprised that Dr Calkins did not mention the use of solution of pituitary in the third stage of labor. During the past fifteen years I have been able to control the amount of bleeding in the third stage of labor by the use of from 0.5 to 1 cc of solution of pituitary following—not before—the delivery of the baby. As soon as the baby is born, the solution of pituitary is given. I was surprised to see the marked difference in the loss of blood following its routine use. There is one objection to the use of solution of pituitary after the delivery of the child: occasionally an hour-glass contraction of the uterus occurs and the placenta is retained in the uterus. I believe it is bad teaching to massage the uterus in the third stage as a routine measure. A certain amount of damage to the uterine structure will be done which though not visible is similar to the damage done by the massage to the muscles of the extremities by too vigorous massage. It has not been my practice to control the action of the uterus during the third stage, because I have found that the use of solution of pituitary has caused almost immediate contraction and separation of the placenta. There are occasionally a few cases in which this does not hold true. I agree with the author that it is essential to control the amount of blood loss, and that the patients recover better, and leave the hospital in a much better condition.

DR LEROY A. CALKINS, Kansas City, Mo. I am unable to answer the question about amytal from personal experience. My stand on the use of solution of pituitary is given at length in the paper. I am sorry that Dr Cornell did not present figures on blood loss in substantiation of his faith in solution of pituitary. I cannot help but feel that opinions without actual figures to back them up mean little or nothing. I administer solution of pituitary immediately after the delivery of the placenta but never before. Whereas I believe that constant moderate physiologic contraction is necessary during the separation phase of the third stage, I am in accord with

Williams, who states that excessive or pathologic contraction, as occasionally induced by solution of pituitary is potentially productive of pathologic states. There is an obvious reason why solution of pituitary, given immediately after the delivery of the baby does not frequently cause trouble. It requires from seven to twenty minutes to produce a hard contraction of the uterus by this means, and in the majority of instances the placenta will have been delivered before the expiration of that time. It seems unnecessary to give solution of pituitary immediately after delivery of the baby when 700 out of 1000 patients are delivered with less than 200 cc of blood loss and only some 2 per cent develop hemorrhage. I hope that Dr Cornell will substantiate his routine by presenting his figures on loss of blood.

LEAD POISONING IN CHILDREN

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AND

EDWARD C. VOGT, MD

BOSTON

The continued occurrence of lead poisoning in children, despite the efforts of physicians, health agencies and insurance companies to disseminate information concerning this preventable disease, warrants the presentation of a review of certain phases of the condition and a further report of the cases observed in this clinic.

SOURCES OF LEAD

Lead poisoning in infants may follow the prolonged use of lead nipple shields,¹ in Japan poisoning has occurred frequently from the use by the mother of face powder containing lead. In infants and older children the ingestion, over a period of time of water containing even small amounts of lead may result in intoxication. Recently there was reported an extensive series of cases of lead poisoning following the inhalation of fumes in homes where storage battery casings were used as fuel.² However, most frequently the ingestion of lead is a result of the habit observed in small children of eating unusual substances.³

Perversions of appetite designated pica leading to the ingestion of foreign substances such as sand, coal, cloth, hair or paint are observed in mentally defective and neurotic children in those suffering from anemia and in those harboring intestinal parasites. In the majority of cases of lead poisoning due to ingestion of paint, the pica has apparently been merely a pernicious habit unrelated to any underlying abnormal condition. The incidence of lead poisoning (table 1) is highest in infants and small children in whom teeth are erupting and in whom there is a great tendency to put things into the mouth.

From the Department of Pediatrics, Harvard Medical School and the Infants and Children's Hospitals.

Read before the Section on Pediatrics at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1935.

1. Wilcox, H. B. and Caffey, J. P. Lead Poisoning in Nursing Infants. Report of Two Cases Due to Use of Lead Nipple Shields. *J. A. M. A.* 86: 1514 (May 15) 1926.

2. (a) Hirai, I. Meningitis in Sucklings in Japan from Lead Poisoning. *Arch. Pediat.* 44: 137 (1927). (b) Fukuhima, M. and Matsumoto, H. Statistics of Two Hundred and Ninety-Eight Cases of Infantile Lead Poisoning Orient. *J. Dis. Infant.* 3: 27 (1928). (c) Kato, Katsumi. Lead Poisoning in Infants. Resume of Japanese Contributions on the Diagnosis of Lead Poisoning in Nursing. *Am. J. Dis. Child.* 44: 569 (Sept.) 1932.

3. Williams, H., Schuler, W. H., Rothchild, H. B., Brown, A. P. and Smith, F. K. Jr. Lead Poisoning from the Burning of Batteries. *Crit. Rev.* 100: 1485 (May 15) 1933.

4. Thomas, H. M. and Blackman, J. D. Recurrent Meningitis Due to Lead in a Child of Five Years. *Am. J. Dis. Child.* 33: 387 (Nov.) 1914. McKhann, C. F. Lead Poisoning in Children. *ibid.* 32: 381 (Sept.) 1926. Strong, R. A. Meningitis Caused by Lead Poisoning in a Child of Nineteen Months. *Arch. Pediat.* 27: 532 (1910). Knudock, I. C. Lead Poisoning in Children with Special Reference to Pica. *J. A. M. A.* 86: 1632 (May 24) 1924.

The lead industry and the manufacturers of cribs and toys, informed of the danger to small children from the ingestion of lead paint have cooperated by substituting other types of pigments for the lead pigments formerly used. New cribs are seldom painted with lead paint, and the better grades of toys are largely free from lead pigment. Painted woodwork and painted furniture continue to present sources of lead available to the child.

Intoxication following the ingestion or inhalation of lead appears to be dependent on a number of factors. Of primary importance are the amount of lead ingested and the period of time over which it is taken in. The absorption of small amounts of lead by all persons, whether in urban or in rural populations, seems to be of normal occurrence and is said to be unaccompanied by danger.⁴ An increase in the amount of lead ingested, or the continuation of absorption over a period of time, may lead to intoxication. Age is a third factor of importance. Children appear more susceptible to severe intoxication than adults. A similar observation is made in experimental animals for likewise the young animals seem more susceptible to lead poisoning than do the adults of the same species. In addition to the influence of age on susceptibility to lead, there is observed considerable individual variation in tolerance to the metal. Some children, after the ingestion of moderate amounts of the metal, rapidly develop encephalitis. Others are capable of tolerating quite large amounts with the minimal development of symptoms but with however the deposition of abnormal amounts of lead in the body, a condition which we designate latent lead

TABLE 1—Incidence of Lead Poisoning in Infants and Children's Hospitals, Boston, 1924-1933

Age	No. Cases
Under 1 year	7
1 to 2 years	2
2 to 3 years	34
3 to 4 years	1
4 to 5 years	4
Over 5 years	3
Total	51

poisoning for under certain circumstances such patients may mobilize the lead deposited in apparently inert form and thereafter develop serious manifestations.

SYMPTOMS

Usually the ingestion of lead in small amounts has taken place over a period of weeks or months before symptoms are noted. The early manifestations are traceable to disturbed function of the gastro-intestinal tract. Anorexia, constipation, vomiting and abdominal cramps are commonly observed associated with a variable degree of anemia. More serious symptoms are those referable to the central nervous system. Peripheral neuritis, the usual accompaniment of lead intoxication in adults is observed infrequently in children, particularly in the younger age groups where the development of encephalitis is more common.

5. Personal communication to the author, at a meeting of the Lead Manufacturers Association, Secretar, J. J. Wormer.

6. Kehoe, K. A., Edgar, Graham, Thompson, Fred, and Sawyer, Lester. The Excretion of Lead by Normal Persons. *J. A. M. A.* 86: 2081 (Dec. 18) 1926. Kehoe, K. A., Thompson, Fred, and Sawyer, Lester. On the Normal Absorption and Excretion of Lead in Children and Excretion in Pregnancy. *ibid.* 87: 1001 (Oct. 1) 1927. Modern American Life. In: Lead Absorption and Excretion in Children. *J. Indus. Hyg.* to be published.

7. McKhann, C. F. Lead Poisoning in Children. The Central Manifestations. *Arch. Neurol. Psychiat.* 27: 29 (Feb.) 1932.

Evidences of the onset of encephalitis are a change in the mental state of the child and more persistent vomiting, frequently of projectile character. Visual disturbances, alteration in rates of pulse and respiration, delirium, stupor, coma or convulsions may ensue. These manifestations often are accompanied by an elevation of the blood pressure, choking of the optic disks and, in extreme cases separation of the cranial sutures. When death occurs it follows a period of

TABLE 2—Additional Data on Lead Poisoning from the Infants' and Children's Hospitals 1924-1933

Number of patients with lead intoxication	77
Number of patients with encephalitic symptoms	41
Deaths from lead encephalitis	11
Number of patients with neuritis without encephalitis	4
Permanent sequelae in 12 patients as follows	
Convulsions persisted in	4
Cerebral atrophy	4
Tremors	2
Mental retardation	6
Muscular weakness	2
Blindness	1
Speech defect	1
Number of patients with roentgen evidence of lead but with minimal symptoms latent lead poisoning	12
Total number of cases of plumbism	89

coma or convulsions and appears to be due to central respiratory failure, as the heart continues to beat for some time after respirations cease.

Although localized lesions such as minute hemorrhages and cellular infiltrations have been found in the brains of patients who have succumbed to lead encephalitis,⁸ it is possible to attribute the train of symptoms observed in the disease to the rapid development of generalized increased intracranial tension due to intense cerebral edema.

Cerebral edema in a child with lead poisoning presenting cerebral symptoms was observed by Chvostek in 1897. A young girl with lead poisoning developed headache, vomiting, a slow pulse rate, coma, choked disks and vasomotor disturbances. At necropsy the meninges were clear. The whole brain appeared swollen, the convolutions were flattened, the medulla was pressed into the foramen magnum, and the ventricles were very small. This description of the gross appearance of the brain in children succumbing to lead encephalitis has been confirmed repeatedly.

Weller⁹ studied the pathology of lead encephalitis in experimental animals and observed a similar intense cerebral edema. We also have produced lead encephalitis in animals and in the course of our experiments have confirmed Weller's observations.

If a child survives severe lead encephalitis there frequently remain sequelae indicating cerebral injury of a permanent nature. Cerebral atrophy or degeneration may become manifest in cerebral palsy, epileptiform seizures or mental deficiency. By encephalography the extensive nature of the injury may be demonstrated. Although lead is known to be deposited in the brain and may directly injure or kill the nerve cells, the destruction of brain tissue which is observed need not be explained by a specific action of the metal but may be attributed to degenerative processes resulting from

impaired circulation to the brain during the prolonged state of intense cerebral edema.

While an encephalopathy is the usual form of lead poisoning seen in infants and children milder types of intoxication are encountered which, although not dangerous to life, are of great importance in that their recognition may result in the prevention of the more serious and frequently fatal encephalitis. Neuritis has been mentioned. Gastro-intestinal disturbances are present in almost all cases. In addition to those symptoms and signs which have been mentioned the ingestion suddenly of large amounts of lead may, by local irritation, induce bleeding into the lower intestinal tract with the passage of fresh or changed blood in the stools. Occasionally also the kidneys are irritated so that a transient albuminuria or hematuria is observed. Glycosuria was seen frequently in our more severe cases, especially those with encephalitis. There was considerable doubt as to whether the elevated blood sugar level and glycosuria were due to injury to the pancreas or whether they were of the type designated as cerebral and observed in other forms of encephalitis.

The incidence of lead encephalitis in the series of cases of lead poisoning observed since 1924 in this clinic is shown in table 2. The relatively high fatality rate and the frequency of permanent sequelae are to be noted.

DIAGNOSIS

Lead encephalitis must be distinguished from other types of disease with cerebral involvement, notably various forms of encephalitis and meningitis. The history of ingestion of lead and the presence of symptoms of gastro-intestinal disturbance preceding the development of cerebral manifestations suggest lead poisoning. In our opinion the cerebral manifestations are evidences only of the cerebral edema and are not pathognomonic of lead intoxication. Nor are the changes in the cerebrospinal fluid of diagnostic importance in distinguishing lead intoxication from other forms of

TABLE 3—Determinations of Lead and Calcium in the Cortex of the Shaft of the Femur and in the Lead Line at the Growing End of the Femur*

	Calcium Mg. per Gm. of Bone	Lead Mg. per Gm. of Bone	Lead Mg. Calcium Gm.
Cortex of shaft	209.0	0.114	0.546
Lead line	83.5	0.602	7.210

* By chemical examination the lead line was found in this case to contain over five times as much lead per gram of bone as did the cortex of the shaft while the lead/calcium ratio (column 3) was thirteen times as great in the lead line as in the shaft. Chemical examinations were made through the courtesy of Dr. L. T. Fairhall.

encephalitis. In cases of lead encephalitis the spinal fluid escapes under increased pressure, oftentimes as high as from 600 to 700 mm. of water pressure. The fluid is clear and colorless, contains usually a trace of globulin and shows an elevation of the total protein. Occasionally a slight pleocytosis is observed.

Examination of the blood for basophilic stippling of the red cells is of diagnostic aid. Stippling of the red blood cells is not, however, peculiar to lead poisoning, nor is it found even with constancy in cases of the disease. Particularly it is likely to be absent in cases of so-called latent lead poisoning, and it may be absent even in children showing definite symptoms of intoxication. In patients and experimental animals the numbers of stippled cells in the circulating blood vary from

8 Okubo, A. and Tanaka, H. *Histo-Pathological Changes in Lead Poisoning*. J. Pediat. (Tokyo) no. 304, p. 1325, 1925.
9 Weller, C. V. and Christensen, A. D. *The Cerebrospinal Fluid in Lead Poisoning*. Arch. Neurol. & Psychiat. 14: 327 (Sept.) 1925.
The Cerebrospinal Fluid in Lead Poisoning, chap. 29 in *The Human Cerebrospinal Fluid*. The Association for Research in Nervous and Mental Disease, New York, Paul B. Hoeber, Inc., 1924.

day to day and reflect perhaps more accurately the level of transport of lead in the blood than the total amount in the body or the amount deposited in certain organs and producing symptoms referable to these organs

The lead line observed in the gums of adults suffering from lead intoxication is found rarely in children. Only a few of our patients had a lead line in the margins of the gums. When present the lead line is a valuable sign, although it must be distinguished from similar lines produced by other heavy metals, notably silver.

Among the most useful aids in the diagnosis of plumbism in children are the recently recognized changes in the bones demonstrable by roentgenogram. These changes, recognized independently by Park,¹⁰ Caffey¹¹ and one of us (E. C. V.)¹² in this country and by various foreign investigators,¹³ consist of zones of increased density at the growing ends of the long bones and at the margins of the flat bones. The development of these changes appears to be dependent on the increased deposition of lead in place of calcium in the growing ends of the long bones as well as on a definite abnormality in the microscopic structure of the bone formation. The results of chemical analysis of the bone substance of the dense band as compared with that of similar material taken from the shaft are shown in table 3 and indicate that there is a definite increase in lead in the dense bands observed at the metaphyseal margins of the long bones. Microscopic examination shows further that in cases of plumbism the trabeculae in these rapidly growing parts of the bones are more numerous and are more closely packed together than in normal bone.

This change in the bones has proved to be one of the most constant observations in lead poisoning in children, and has led to the discovery of numerous cases with minimal symptoms or with unusual clinical manifestations. Rarely has the lead line in the bones been absent. In one patient, 20 months of age, a diagnosis of lead encephalitis was made and confirmed by chemical analysis of the excreta for lead, but the diagnostic lead line in the bones was absent. The child improved gradually and within a few weeks had developed the definite dense band found in lead poisoning. Heavy lines in the ends of the long bones are not peculiar to lead poisoning, as the ingestion of phosphorus and other substances may produce similar lines.¹⁴ Narrow lines of sufficient density to be confused with a lead line may be found at the ends of the long bones in healing rickets and in infants with vitamin A deficiency. Occasionally in the normally growing child there may be a zone of increased density at the metaphyseal margins of the long bones, owing only to a heavy deposit of calcium. These lines should not be confused with the lines observed in lead poisoning, which are of greater density and width (fig. 1).

Further confirmation of the presence of lead in the cerebrospinal fluid or blood may be obtained by spec-

troscopic examination.¹⁵ This determination is said to permit an exact diagnosis of the presence of lead within twenty-four hours after blood is withdrawn from the vein of the patient.

The demonstration of lead in the excreta of children by chemical examination is not adequate evidence of intoxication as it has been shown by Kehoe⁶ and confirmed in this clinic that normal children excrete small amounts of lead in the urine and stools. However, patients with lead poisoning excrete much larger amounts of the metal than do normal children, so that quantitative determinations of lead in the excreta properly appraised, may be accepted as satisfactory evidence of plumbism.

TREATMENT

Although it is impossible within the scope of this paper to discuss the chemistry of lead in the body, a brief statement may aid in the understanding of the suggested methods of treatment.

Aub and his co-workers¹⁶ have pointed out that lead in the body is absorbed, transported, deposited and excreted much as is calcium, so that, in general, factors

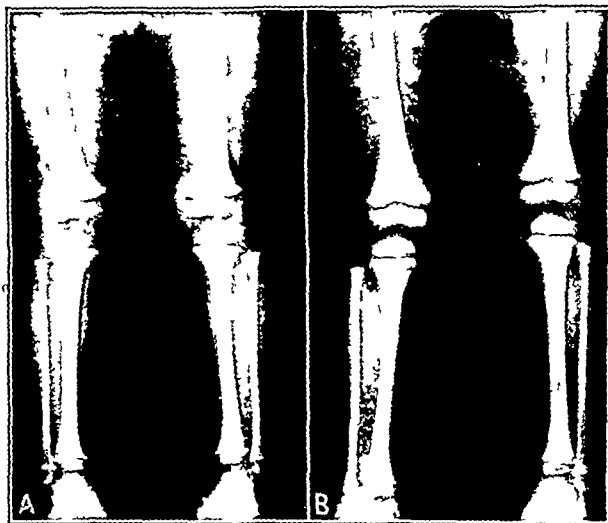


Fig. 1—A dense transverse bands at the growing ends of the long bones observed in a child with lead poisoning. B roentgenogram of the long bones of the same patient four months later. Note the greater breadth of the bands.

which influence calcium metabolism might be expected to have an influence on lead. Lead is absorbed through the lungs or intestinal tract and, in rare instances, through the skin. It is carried in the blood stream presumably as the phosphate and is deposited in various organs, especially the brain, liver, pancreas and bones. Lead deposited in the organs of the body may induce the symptoms referable to the various systems, but lead deposited in the bones is in an inert form. Thus in relieving lead poisoning measures are usually recommended which tend to hasten the removal of lead from the circulation and the deposition of the metal in the bones. To this end calcium salts¹⁶ or phosphates¹⁷ are administered to diminish the solubility of lead in the blood and vitamin D is given to hasten the growth

10 Park, E. A. in discussion of McKean, Stafford. The Bone Lesions of Congenital Syphilis. *Am. J. Dis. Child.* 39: 899 (April) 1930. Park, E. A., Jackson, Deborah, and Kyjdi, L. L. Shadows Produced by Lead in the X-Ray Pictures of the Growing Skeleton. *ibid.* 41: 485 (March) 1931.

11 Caffey, J. P. Clinical and Experimental Lead Poisoning. Some Roentgenologic and Anatomic Changes in Growing Bones. *Radiology*, 17: 957, 1931.

12 Vogt, E. C. A Roentgen Sign of Plumbism. *Am. J. Roentgenol.* 21: 550, 1930. Roentgenologic Diagnosis of Lead Poisoning in Infants and Children. *J. A. M. A.* 95: 125 (Jan. 9) 1932.

13 Koga, Sato, and Kishihara, cited by Kato, K. and Kraft, F. Röntgenbefunde bei Bleivergiftungen im Kindesalter. *Fortschr. a. d. Geb. d. Röntgenstrahlen* 16: 40, 1932.

14 Phemister, D. B. The Effect of Phosphorus on Growing Normal and Diseased Bone. *J. A. M. A.* 70: 1777 (June 5) 1918.

15 Kamiura and Uchida, cited by Kato, Shiley, P. C., Scott, T. J., M., and Blumberg, H. The Spectroscopic Detection of Lead in the Blood as an Aid to the Clinical Diagnosis of Plumbism. *Bull. J. S. Hopkins Hosp.* 51: 52, 1932.

16 Aub, I. C., Fairhall, L. T., Mine, A. J., and Remy, J. L. Lead Poisoning. *Medicine* 11: 193 (a comprehensive review of the chemistry, pathology, and other aspects of lead poisoning).

17 Shelling, D. H. Effect of Diets on Calcium and the Toxicity of Lead in the Food. *Journal of the State Hygienic Laboratory of Michigan* 20: 28, 1932.

of bone. The efficacy of these therapeutic measures is difficult to evaluate, as the milder cases of intoxication show prompt improvement if the ingestion of lead is prohibited and if the child remains free from infection and in a good state of nutrition.

Removal of lead from the body, or deleading, may be accomplished by inducing an acidosis or an alkalosis, by deprivation of calcium or by the administration of parathyroid extract-Collip.¹⁸ In view of the fact that acute infection or the development of acidosis may induce symptoms in a child who harbors lead in the bones but who has been symptom-free for a period of time, and furthermore because efforts at deleading have resulted in the recurrence of cerebral symptoms, we have given up the attempt to delead our patients.

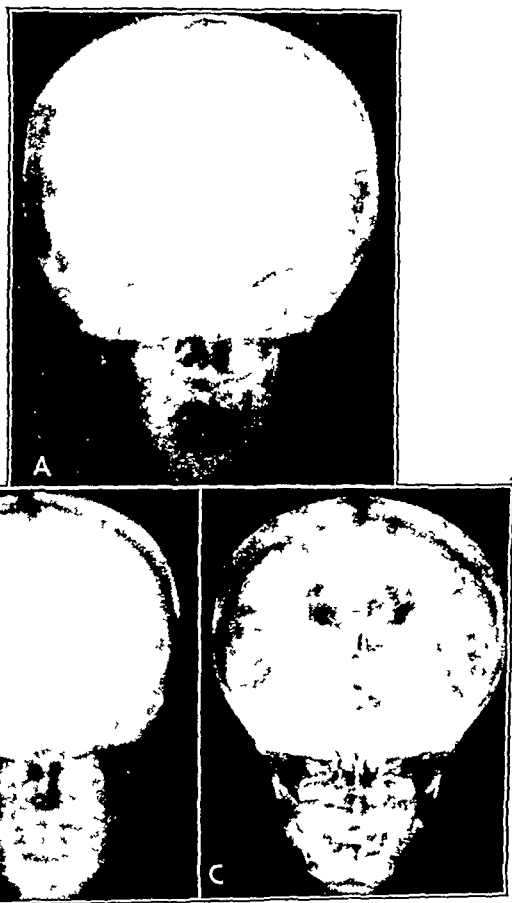


Fig 2—A roentgenogram of the skull of R. M. on her admission to the hospital. No abnormality is noted. B roentgenogram of the skull three weeks after admission showing the sutures widely separated. C encephalogram seven weeks after the onset and three weeks after the subsidence of symptoms of lead encephalitis. Cerebral atrophy is evidenced in the markedly enlarged ventricles and the excess of air over the cortex of the brain.

Although danger of return of the symptoms of lead poisoning persists for some time, it gradually subsides owing to the spontaneous elimination of the metal.

The treatment of children who have already developed lead encephalitis is not satisfactory. Lead deposited in the brain appears to induce intense cerebral edema which is highly resistant to the ordinary methods of combating cerebral edema. Intravenous injections of magnesium sulphate or of hypertonic solutions of salt or dextrose have had only temporary

effects. It would appear that life can be prolonged or maintained by the use of drugs which control the convulsive seizures, but the unfortunate sequelae cannot be prevented by these substances. In the more severe cases separation of the sutures of the skull has occurred, resulting in relief to the patient through spontaneous cerebral decompression. The pressure required to accomplish this decompression is great and may account for the permanent cerebral injury that is so common among the children who survive the acute encephalitic stage. The following case illustrates the course of severe but nonfatal lead encephalitis.

REPORT OF A CASE

R. M., a girl, aged 2½ years, was admitted to the hospital because of anorexia, drowsiness and tremors of three days duration. For three months she had vomited, suffered from abdominal cramps and been constipated. The history revealed that for four and a half months she had been chewing paint from the woodwork and furniture of the house. After admission to the hospital she remained in a stuporous state, refused food, continued to vomit almost everything taken and constant tremors of the extremities and periodically suffered from generalized convulsions.

Examination of the blood showed a moderately severe anemia, with numerous stippled cells present in the smears. Roentgenograms of the long bones showed definite lead lines. The blood pressure was elevated. Severe papilledema developed rapidly, and over a period of three weeks the sutures of the skull gradually separated (fig 2 A and B). The spinal fluid was found to be under greatly increased pressure, globulin was present, the sugar content was normal and the cell count was elevated, ranging in various examinations from 19 to 31 mononuclear cells. Therapy directed toward hastening the deposition of lead in the bones as well as measures designed to relieve increased intracranial tension were apparently without effect on the course of the disease. An operative procedure, in the nature of a widespread flap decompression, was contemplated but was not performed. Following the spontaneous decompression whether or not because of it we cannot say, she began gradually to improve. The tremors subsided and the vomiting ceased. As she became less stuporous it was apparent that she had become mentally defective and that she was almost totally blind. With the disappearance of papilledema the optic disks became very pale. Encephalograms made seven weeks after admission and three weeks after the subsidence of symptoms of increased intracranial pressure showed considerable cerebral atrophy as evidenced by markedly enlarged lateral ventricles and an excess of air over the cortex (fig 2 C). Further observation of the child over a period of several months indicated that her mental condition gradually improved and fortunately her vision returned at least in part, but she remained obviously and probably permanently retarded mentally.

In view of the failure of therapy in children with cerebral manifestations of lead poisoning, we have been prompted to undertake the experimental investigation of lead encephalitis. By means of organic lead salts given by mouth it was found to be possible to induce with great regularity a fatal type of lead encephalitis in rats, guinea-pigs and rabbits. After a few days the animals developed tremors which were followed by generalized clonic convulsions. After a variable period of convulsions death ensued from respiratory failure. Measurements of the blood pressure of guinea-pigs in the stage of tremors or convulsions of lead encephalitis showed an elevation almost 50 per cent above the normal level established by similar determinations in control animals of the same ages and weights. The brains of animals succumbing to lead encephalitis showed the intense edema described by Weller.

Thus lead encephalitis induced experimentally in guinea-pigs resembled in many aspects the disease as

18 Aub J. C. and Hunter D. Lead Studies. XV The Effect of the Parathyroid Hormone on the Excretion of Lead and of Calcium in Patients Suffering from Lead Poisoning, *Quart. J. Med.* 20 123, 1927.

observed in infants and children. After producing and studying the manifestations of lead encephalitis in upward of twenty guinea-pigs we undertook to test the efficacy of various therapeutic agents. Thus far in a series of over fifty animals we have been unable to influence the course of the disease if treatment has been delayed until the animal is in a state of convulsions. Control of the convulsive seizures has been accomplished by the use of magnesium sulphate, phenobarbital, pentobarbital-sodium, amytal or paraldehyde, with considerable prolongation of life but without effect on the final outcome. The parenteral administration of calcium salts, sodium salts including phosphates, iodide, thiosulphate, ferricyanide and thiocyanate, and other drugs which theoretically might have some effect on the solubility of lead in the blood or the deposition of the metal in the body, has been tried without influence on the course of the disease. Other means of combating lead encephalitis in experimental animals are now under investigation.

SUMMARY

A diagnosis of plumbism can be made in children in the early stages of intoxication by the correlation of the history, physical signs and laboratory data in conjunction with the roentgenologic findings. Cerebral manifestations seldom occur in patients who receive, at this stage of the disease, treatment directed toward hastening the deposition of lead in the bones. Although progress has been made and is being made in the understanding of lead encephalitis, the treatment of patients with lead encephalitis remains in an unsatisfactory state.

The attack on lead poisoning in children must be made largely through prophylactic measures. Realization by physicians of the dangers to children of the continued ingestion of lead and the dissemination to mothers of information on the subject should result in prevention of the disease.

ABSTRACT OF DISCUSSION

DR R. A. KEOHE, Cincinnati. I shall emphasize a few points made by the authors and speak briefly on lead excretion. Although lead encephalitis occurs in adults, it is relatively rare, occurring only when massive doses of lead have been absorbed. In children, on the other hand, it is not infrequent. It is of particular interest and importance that in children with lead poisoning there is a striking tendency for symptoms of the central nervous system to develop indicating the fundamental difference in the disease in children and adults. Encephalitis in children as in adults, has a bad prognosis. From available figures one concludes that the prognosis in children and the outlook for complete recovery are even somewhat worse than in adults. The preventive aspect of this problem should therefore be greatly stressed. Since the authors' figures have shown that this condition occurs at the period when children are most likely to eat abnormal things and to chew various objects in their environment, pediatricians should be alert to note abnormal appetite and behavior. Pica being the most frequent cause of lead poisoning in children, strenuous efforts must be devoted to eliminating lead from their environment. This situation is very serious in Queensland. A large number of cases have been reported presumably because children play on weathered, lead painted verandas where the lead pigments have dusted out to the surface. The contributions of the roentgenologist to the diagnosis of lead poisoning are among the most significant in our day, and it is an unfortunate limitation that they are applicable only to children. This sign of the line in the bones is extremely important. Recognizing however that it may not always be possible to differentiate this line from certain other densities that occur on the epiphyseal end, it is of some consequence to stress the diagnostic importance of lead in the excreta.

It has been shown beyond any reasonable doubt that lead occurs normally in the excreta of children as of adults. The quantity of lead that may be found under normal conditions is small. The levels of lead in the excreta that can be demonstrated to have clinical significance are comparatively well defined. It is thus possible with accurate analytic methods to recognize the probable existence not only of lead poisoning but also of lead exposure in unusual amounts, both in children and in adults. This method as an adjunct to the much quicker and much more convenient x-ray method, will aid materially the correct diagnosis of lead poisoning in children.

DR ROBERT A. STRONG, New Orleans. In 1914 I reported a case of lead encephalitis in a child 18 months old and at the time I could find only six other reports in young children although the literature at the time seemed to indicate that it prevailed extensively among adult workers in the lead industry in France. As the authors have stated physicians must be lead conscious in order to be able to elicit lead poisoning. A considerable amount of lead poisoning has been overlooked in these little patients. Since hearing papers such as Drs McKhann and Vogt have presented I have been more alert. I have seen three cases in New Orleans during the past winter in which the lead line was demonstrable. Unfortunately, the cases had advanced until the central nervous system was involved and consequently the cases were not amenable to treatment. The authors have called attention to the fact that stippling of the cells is by no means common to lead. Dr Foster Johns, of the department of clinical medicine at Tulane had his attention called to a widespread mortality among wild ducks around the hunting grounds on the Gulf Coast of Louisiana. An examination of the blood of these ducks revealed the cause of the mortality. His observations were similar to those made by Dr McGrath of the Mayo Clinic a few years ago. When the gizzards of the ducks were opened it was found that they were filled with lead shots such as are used in hunting ducks. The shot removed from the gizzards were about one third the size of shot that have never been used. These ducks died from lead poisoning as a result of mistaking the shot in the bottom of the lagoons for the small stones they usually ingest. The authors have informed me that they have received the cooperation of some of the manufacturers of toys and other articles which find their way into the hands of children and have received reasonable assurance that they will use something other than lead in the paints used in coloring these articles.

DR KATSUJI KATO, Chicago. This presentation on lead poisoning reminds me of conditions in Japan. It is rather unusual in this country to see so many cases as Drs McKhann and Vogt have experienced in Boston in a period of nine or ten years, for even in Japan there is an average annual figure of about ten cases of lead poisoning in the larger pediatric clinics. I am anxious to point out that among various forms of lead poisoning there is one particular type to which but little attention has been paid in the past, namely congenital saturnism or lead poisoning. In Japan the source of lead has been chiefly in the form of face powders. At present the government requires the use of titanium instead of lead in the manufacture of cosmetics. In spite of this lead is still being used in a certain percentage of face powders because lead seems to give a better spreading effect on the skin. The authors informed me that the pregnant mother has a greater tolerance for lead owing to the fact that the metal is taken up in the rapidly growing bones of the fetus. The Japanese mothers continuously use lead containing cosmetics on their necks, faces, shoulders and breasts during pregnancy, often to the extent of veritably whitewashing the exposed parts of the body. This would strongly suggest the possibility of congenital origin of lead poisoning in new-born infants. In certain cases of congenital hydrocephalus may it not be reasonable to suspect intra uterine lead poisoning as its cause? Again in some cases of spastic paralysis of the limbs with or without convulsive seizures which are usually thought to be due to intracranial hemorrhage congenital lead poisoning may be a possible cause. This suggests at once that the so-called lead line at the metaphyseal ends of long bones in the new-born infant presenting suggestive symptoms should be looked for by making roentgenograms. This is important both in diagnosis and in treatment.

THE ASEPTIC TANNIC ACID TREATMENT
OF DIFFUSE SUPERFICIAL BURNSDONALD B. WELLS, M.D.
HARTFORD, CONN.

Since the time of Hippocrates¹ who left detailed and complicated prescriptions for the treatment of burns probably every medical practitioner of any considerable experience has followed some favorite or original treatment of the burns that have come under his care. I am no exception to this rule. Such ideas of treatment as I have formulated are based entirely on clinical experience. I have no foundation of controlled scientific experiment to support my results, no extensive laboratory data to substantiate my beliefs, very little to prove my point, except the clinical records. I have been stimulated to present the details of this treatment through the interest taken in it not only by the staff of the Hartford Hospital, but by the Massachusetts General Hospital, where burns have been made a special assignment under the direction of Dr. Richard H. Wallace,² and the method of treatment here presented is being employed in suitable cases.

During the past decade three underlying principles have come to be recognized as of special importance in the treatment of extensive burns: first the prevention of dehydration, second the maintenance of asepsis, and, third the promotion of epithelization. The necessity of employing large quantities of water not only in the treatment of the primary shock but even more to balance the requirements of a patient continuously losing fluid day after day from an extensive granulating area was conclusively demonstrated by Underhill in 1933.³ The introduction of tannic acid by Davidson in 1925⁴ has revolutionized and apparently for the first time in history largely standardized the local treatment of diffuse burns. Secondary bacterial infection has long been recognized as an important etiologic factor in the production of the scarring and contractures that permanently disfigure the victims of these accidents, and there is increasing proof that bacterial infection, rather than proteolytic toxemia, is the cause of the progressive exhaustion terminating all too often in the ultimate death of these patients. Except in very superficial burns, epithelization is generally still secured by some form of secondary skin graft of the granulating area.

Proteolytic toxins, assumed for many years to be formed in and absorbed from diffuse superficial burns, have never been satisfactorily isolated or identified and are still altogether hypothetical. On the other hand, the serious results of bacterial infection in these burns are very real and are recognized by all. Unfortunately, it seems to have been assumed that although all burns are primarily sterile, this sterility is necessarily short lived. The conditions attendant on these accidents and the extensiveness of the lesions have heretofore insured contamination sooner or later. Dead and dying tissues

provide a most fertile soil for the growth of bacteria. Surgeons have hesitated to institute adequate measures to prevent this certain infection, because the pain associated with these accidents has made them reluctant to handle the patient, the degree of surgical shock has often contraindicated anesthesia, and debridement or epluchage in diffuse superficial burns has, of necessity, sacrificed living tissue of great value. As a result of these and, perhaps, other considerations, the fundamental basis of all asepsis, mechanical cleanliness, has been almost universally neglected, while stress has been laid on the local dressing of the burn. Because of these assumed limitations, it is not surprising that, within a few hours, all extensive burns have become more or less infected. In my experience, as well as in that of almost all other observers, many different types of bacteria participate in the production of this infection. My cultures have failed to substantiate a recent observation by Aldrich⁵ that, within a comparatively short time, the streptococcus overgrows all other organisms to become the sole possessor of the field.

Within a year of the publication of Davidson's paper Beck and Powers⁶ had noted the advantages of a spray over the wet compresses originally suggested, the desirability of rapidly drying the coagulum, and the advisability of not disturbing a firmly adherent crust even in deep burns provided infection did not develop beneath it. In uninfected third degree burns they occasionally waited reepithelization to take place solely from the periphery. I had observed these advantages in my own cases and such further modifications in the treatment of extensive burns as I have evolved are largely corollary to their observations.

I am convinced that infection alone is largely responsible for the exhausting morbidity, many of the complications and a vast majority of the delayed deaths that occur in cases of diffuse superficial burns. Other observers have come to a similar conclusion and have noted that, when infection is prevented, there is little, if any, evidence of so-called proteolytic toxemia. The method of treatment that I employ is particularly directed toward securing a mechanically clean and aseptic tan and toward maintaining this tan intact until it exfoliates spontaneously.

Instead of putting an extensively burned patient into a tent heated by electric lights and spraying him with tannic acid, I place him immediately in a tub filled with warm tannic acid solution. A good, big tub is desirable, such as is seen in the hydrotherapeutic department of every modern hospital. I am not particular about the precise percentage of the solution but use enough tannic acid powder to give it a good muddy color. Tannic acid powder is cheap and a large quantity is kept on hand and is immediately available in the emergency room. The temperature of the tub filled with tannic acid solution is regulated solely by the comfort of the patient. Fresh water is run in and the solution drained out continuously, a comfortable temperature being always maintained, and more tannic acid powder is added from time to time. I have not seen a case of tannic acid poisoning. Every adult has experienced such relief as to be thoroughly cooperative within a few minutes after being placed in the tub, semiconscious patients have seemed to sigh with relief, and others,

Read before the Section on Surgery, General and Abdominal, at the Eighty-fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

1. Biddle, J. C. Burns, Their History and Treatment. Pennsylvania M. J. 5: 583-587, 1901-1902.

2. Wallace, R. H. Personal communication to the author.
3. Underhill, F. P., Carrington, G. I., Kapsinow, Robert and Pack, C. T. Blood Concentration Changes in Extensive Superficial Burns and Their Significance for Systemic Treatment, Arch. Int. Med. 32: 31-49 (July), 1923.

4. Davidson, E. C. Tannic Acid in the Treatment of Burns. Surg. Gynec. & Obst. 41: 202-221 (Aug.) 1925.

5. Aldrich, R. H. Role of Infection in Burns. New England J. Med. 208: 299-309 (Feb. 9) 1933.

6. Beck, C. S. and Powers, J. H. Burns Treated by Tannic Acid. Ann. Surg. 84: 19-26 (July) 1926.

conscious but burned beyond possible recovery, have talked quietly and hopefully about things totally unrelated to their condition. Even hysterical little children, in the hands of a tactful nurse and under the influence of a mild narcotic, become quiet within a few minutes and passively, if not actively, cooperate in the treatment.

Once the analgesic effect has become manifest the real work begins. The solution penetrates, softens, loosens and elevates the destroyed tissue. Gross tags of full thickness skin are painlessly removed with thumb forceps and scissors, the tops of blisters are carefully and completely wiped away with gauze. Unburned areas, right up to the margin of the eschar, are gently but scrupulously scrubbed with soap and water as though the patient were receiving a bed bath. When the tub becomes grossly fouled it is drained, quickly cleaned and immediately refilled with a fresh solution of tannic acid. This mechanical cleansing goes on as long as possible—a continuous, painstaking, persistent, back-breaking effort to remove completely every bit of dead tissue and cleanse thoroughly the whole body. It is not work for a nurse in a starched uniform, an intern who knows only how to write orders or a surgeon in his evening clothes. My objective is a full three hours of continuous mechanical cleansing with the patient largely immersed in a tub full of tannic acid solution, after such a prolonged conscientious effort has been made, not only the burned area but the whole body surface is mechanically clean, while pathogenic bacteria with their necrotic pabulum have been practically eliminated.

The tub filled with warm tannic acid solution possesses all the advantages and virtues extolled by the advocates of the immersion treatment of burns during

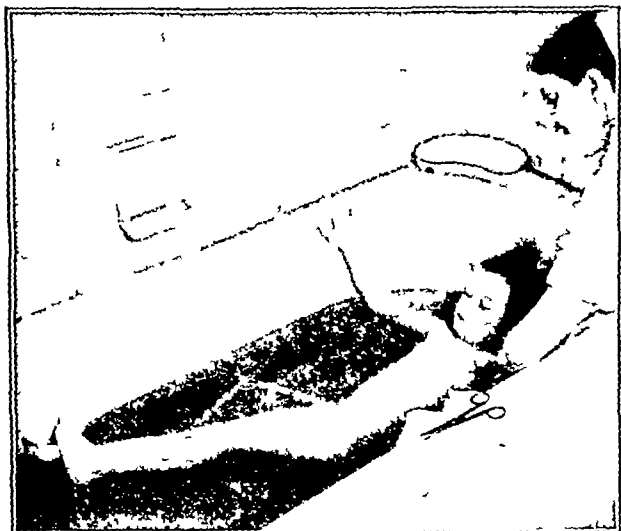


Fig 1—Patient largely submerged in tub of tannic acid solution in which mechanical removal of sloughs and blisters and thorough cleaning of the entire body is accomplished.

the past thousand years or more. It facilitates the removal of burned clothing and debris, the patient is scrupulously cleansed from head to foot, accruing products of inflammation are promptly washed away, the modic effect is surprisingly immediate and complete, body heat is constantly maintained, it is a recognized method of combating surgical shock, and the

burned areas tan rapidly. Throughout this period of mechanical cleansing as much fluid as possible is given by mouth—water, coffee, orange juice—whatever the patient will take in greatest abundance, for dehydration must be prevented.

By the time the patient is clean and ready to leave the tub, the tan is already established. It is an unusually smooth, thin, adherent coagulum, for all

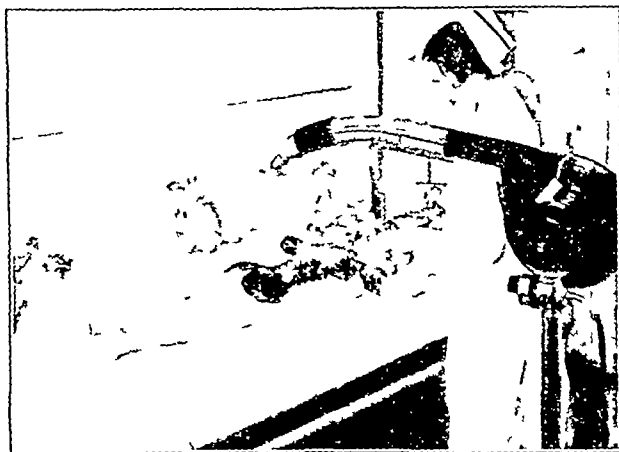


Fig 2—Completely exposed patient being repeatedly sprayed and immediately thoroughly dried.

foreign material, gross sloughs and blisters have been removed in the tub and the chemical penetrative powers of the tannic acid have not been dissipated in the fixation of such dead tissue as could and should be removed mechanically.

At this point I employ the second distinctive feature of this treatment. The patient is transferred from the tub to a warm room, placed on a dry bed and, from this time on, kept absolutely dry with a continuous draft of warm air from one or more large commercial hair driers. These machines are so constructed as to permit a wide range of choice in the velocity and temperature of the draft they furnish. Heretofore it has been usual to place these patients in a tent heated by electric lights, but such a contrivance cannot compare with the blower for either comfort or efficiency. The burned area and, preferably, the entire body is fully exposed to the warm draft from the blower. For about seventy-two hours after the patient has been removed from the tub, the burned areas are more or less constantly sprayed with a 5 per cent solution of tannic acid but immediately and thoroughly dried with the blower. Only a small area is sprayed at a time, this is completely and absolutely dried before another area is sprayed. The bed is never allowed even to become damp. I am very careful that every little blister that may form during this period is carefully wiped away with sterile gauze, sprayed and immediately dried. Such little blisters represent inflammatory products from cells which though they may have survived the immediate trauma were so grievously injured that they died after the removal of the patient from the tub. They almost invariably appear at the periphery of the developing eschar.

The eschar is usually perfectly firm and adherent after seventy-two hours of alternate spraying and immediate thorough drying. Thereafter new blisters seldom appear. From this time on the blower alone is

employed, but the draft of warm air must be maintained continuously, for it is of the utmost importance that the still completely exposed patient be kept absolutely dry. Even a little perspiration may soften the precipitate and a macerated tan invites bacterial invasion. If infection supervenes, the eschar will separate and require removal, being replaced by a granuloma which, in all probability sooner or later will require skin grafting under relatively unfavorable conditions.

The method of treatment that I have outlined, the securing and maintenance of an aseptic eschar, is applicable to the great majority of burns requiring treatment in a general hospital. It is a method of treatment especially useful in extensive scalds and in such burns as result from gasoline explosions or ignited clothing. It will be most successful in those diffuse superficial burns in which little scattered islands of epithelium survive, such as hair follicles and sweat glands, from which, under the protection of an aseptic tan, reepithelization rapidly takes place. I have not had to resort to skin grafting of any sort in a single scald treated by this method, and I am inclined to believe that reepithelization in every diffuse superficial burn may be more nearly perfect and leave less scarring when it is developed under the protection of an aseptic tan than when it is promoted from any form of a skin graft.

This method of treating diffuse superficial burns, based on securing and maintaining an aseptic eschar, can be carried out most successfully in a well equipped hospital. The necessary physical equipment can be easily assembled there, ready for immediate use. In the order of its employment, this equipment consists of an oversize tub, an adequate available supply of tannic acid powder, a properly ventilated room that can be maintained at an even temperature, day and night, a small hand atomizer and an electric hair drier. The most essential requisite, however, is an immediately available personnel of not less than three intelligent and enthusiastic nurses who thoroughly understand the principles on which this treatment is based. Whatever success I may have attained with this method of treating extensive superficial burns is due to the intelligence, enthusiasm and loyalty of a small group of nurses. Failure is certain when the fundamental principles are not grasped or when there is a distaste for continuous physical exertion on the part of hospital personnel.

I have secured and maintained asepsis of diffuse superficial burns by this method of treatment. This I have proved repeatedly by obtaining sterile cultures from beneath an eschar developed and maintained by the method here described. On the other hand, every failure to secure and maintain an adherent coagulum to complete reepithelization has been associated with bacterial infection. To paraphrase Moynihan: The treatment of every burn is an experiment in bacteriology. The success of the experiment in respect of the salvation of the patient, the quality of healing in the wound, the amount of local or constitutional reaction, the discomforts following the receipt of the burn, and the nature and severity of any possible sequels depend on the intelligence and the constant care exercised by those in attendance.

580 Asylum Street

7 Moynihan, Berkeley Essays on Surgical Subjects Philadelphia
W. B. Saunders Company 1931

RECONSTRUCTIVE SURGERY AND OLD FACIAL BURNS

HOWARD L. UPDEGRAFF, MD
HOLLYWOOD, CALIF.

One of the first demands for reconstructive surgery came through the necessity of repair of old facial burns. The custom in early warfare of pouring boiling pitch over the walls onto the invading host doubtless furnished many cases. The last war evolved certain surgical procedures now in general use: the Stent graft (Escher's outlay), the perfection of the tube flap and the popularization of larger skin grafts.

The present-day machine age has so greatly multiplied the number of burned faces that they are more numerous today than they were in war time. There is now more opportunity to study these cases, as they are usually carried through to reconstruction in one hospital. Constant observation of these cases over several years has brought new emphasis on methods of determining scar causation and treatment.

The cause of the burn is not particularly important as reconstructive surgery is not advisable until the tissue is fully recovered from the insult. An inventory of the amount of destruction in old facial burns should list first the injury to the various sense organs. The depth of the burn and the possible inclusion of cartilaginous and bony structures must be evaluated. The amount of hair-bearing tissues destroyed is important from a future cosmetic point of view. The burn may be so extensive as to preclude the use of the surrounding tissue for sliding flaps or tubes.

The good tissue remaining is difficult at times to identify, owing to the pull of surrounding cicatrices. The lower eyelids may be spread down over the cheeks in such pronounced ectropia as to seem obliterated. The nostrils may be sealed over and the lips adhered to the nose or even the chest. Apparent absence of the upper part of the ears may prove to be nothing more than that they are embedded in the scar tissue.

The scarred tissue varies greatly in appearance. Induration and scaling indicate that healing is still active. The tendency to seborrhoeic reddish, hard keloids is indicative of continued irritation, either bacteriologic or perhaps due to the original burning agent, and is a danger sign of grave importance.

A point too little stressed in the treatment of facial burns is the extremely poor mental attitude of the patients. They feel that theirs is a hopeless fate, and their reaction is reflected in their general physical condition. Their disinclination to care for themselves renders them prone to kidney and lung involvement.

The necessity of preserving the special sense organs may advance the date of reconstructive surgery before the original burns have healed. A single case may and often does present a gamut of complications that range from corneal ulcerations to missing or adherent ears. Entropion, ectropion, external nasal obstruction, oral constriction, painful cicatrices, orbital deficiencies, exposed bone and marked keloidal involvement may call on early repair necessitating the application of the principles of reconstructive surgery. The presence of any of these complications implanted on a diseased body materially advances the importance of each.

Read before the Section on Surgery, General and Abdominal at the Eighty-Fourth Annual Session of the American Medical Association Milwaukee June 14, 1933.

The plan for reconstruction of the burned face is aided by recourse to old and new photographs and plaster face models built up to meet natural contours. The problem may then be divided into surgical stages and the time element scheduled. The character and number of skin grafts indicated as well as the possible use of tube flaps and the territory of their origin, must be planned.

The preservation of the eyes usually involves the restoration of the lids. My associates and I have used the Stent graft (Esser outlay) in about 70 per cent of our cases. This consists of dissecting the scar adhesions free from the lid and implanting a thin skin graft, wrapped raw side out, around a modeled piece of Stent or dental impression compound. The Stent is removed in from five to eight days, leaving a sulcus which smooths out from the surrounding tissue tension in from four to six weeks.

Controversy exists as to the best means of eyelid reconstruction. If thick skin is needed, it should be provided by flaps. The conjunctival deficiency may be supplied by lining the projected eyelid flap with mucous membrane from the oral cavity.

To protect the eyes, glasses with Crookes lenses must be worn. Adhered ears from scar tissue must of necessity be freed and permanently raised to hold the spectacle bows. The top of the ear is usually the most severely burned, owing to the proximity of the hair. The employment of a large Stent graft with the introduction of a small tube flap later on to furnish the ear rim gives a satisfactory ear.

Generally speaking, the release of major scar adhesions of the burned face may be best accomplished by free undercutting and the advancement of a tube flap from the nearest available area. The tube may be waltzed to the points of greatest tissue distortion and a sufficient amount of full thickness skin from the tube left to fill the defect from the surrounding scar tension. This principle of assignment of portions of the tube to different sites has not received sufficient notice in contemporary literature. As an example, many times in severe burns of the face the nasal arch is obliterated by scar contraction, and the inner canthus is pulled up to the level of the nose. The placement of a full thickness graft with the necessary ten to fifteen day pressure presents a problem of definite proportions. The employment of one end of a small tube flap solves the difficulty.

The transference of the remainder of the tube flap, for instance to the upper lip, necessitates only the rotation of the tube to the lip allowing the blood supply to continue from the original source. The philtrum may be reconstructed by dimpling the respread flap in the center line by catgut sutures inserted between the outspread tube and the lip. If alar deficiencies exist, a small curtain flap may be elevated from the tube while on the upper lip to furnish the necessary tissue. The scar tissue flap from the ala is lowered to cover the raw area from the tube.

The eyebrows may be reconstructed by the use of full thickness 5 mm wide grafts from the scalp. The use of hair-bearing grafts for eyelashes is acceptable only in the absence of a history of corneal ulceration.

The use of full thickness grafts on movable portions of the face offers a problem owing to the hardship of attempting immobilization and necessary pressure. This may be solved by the use of the intradermal graft or the use of a half or a full thickness tunnel graft when relief of marked contraction is desired.

The greatest factor in reconstructive surgery of the burned face is the forbearance to wait between operative stages until the tissues heal and soften. The intervals between surgical steps are aimed at the furtherance of these conditions.

The patient's mental condition may be markedly improved by instruction in the use of makeup. It is my custom to employ a professional makeup artist to aid in giving the patient a vision of the final result. The boon works both ways as the more difficult points of makeup usually mark the important features of the operative stages.

Even with carefully planned surgery our efforts may go astray if attention is not paid to the underlying factors influencing healing. In our experience, routine preoperative laboratory work, such as urinalysis, blood work including red and white counts, differential bleeding and clotting time and a Wassermann test are a necessity. From the point of view of purely reconstructive plastic surgery, our greatest laboratory interest is in the basal metabolic reading. Without exception in a large series of burned patients with keloidal scars we have found a markedly low metabolic reading. I believe that the increased concentration of the blood over a long period following large burns, produces a partial asphyxiation of the tissues, which permanently damages the mechanism controlling the metabolic rate. The administration of thyroid substance by mouth has markedly improved the keloids under our observation and in certain hypertrophic scars has been almost specific.

With this thought in mind, the once generally accepted fact that keloids occur only in Negroes creates an issue. The fact is that in the Northern, so-called goiter states, few keloids occur in native-born or old inhabitants. In the South, where goiter, by comparison is seldom seen, keloids are common. A recent conference with the medical officers of the Japanese training fleet visiting in Los Angeles brought forth the information that keloids are literally unknown in Japan where the diet is high in iodine content. These are broad generalizations, made purely with the thought of raising the question as to whether the presence or absence of hypertrophied scars and keloids may not be partially a glandular dyscrasia.

As a routine in the clinic with which I am associated Rosenau tissue cultures of excised keloidal material are made. Dr. Herman Zeiler, the pathologist has isolated in a number of instances, a staphylococcus type of organism. A bacteriophage made from these organisms when used as a local application on the wounds of the patient from whom the organism was isolated seemingly prevented further keloidal formation. Injection of the bacteriophage into keloids on other parts of the body of the patient caused sloughing and subsequent marked improvement of the area injected, in from six to eight weeks. It is possible that a low grade infection sealed in the tissue of an old healed burn in a patient with either a lowered metabolic rate due to the burn or a low metabolic rate before being burned offers a reason for keloidal and hypertrophic scars.

The use of the x-rays in the treatment of old facial burn scars at our hands resolved itself into the early treatment of new surgical scars contracted in the improvement of the old ones. Our radiologist Dr. B. H. Sherman has good results by the use of the Lee air-cooled tube with the broad focus. A dosage of 100 kilovolts with 4 milliamperes giving 550 roentgens measured in air through 1 mm of aluminum over

four weeks, has been helpful in the treatment of soft recent keloids. If more advanced and with marked induration, we abandon the filter.

The path of the surgeon engaged in reconstruction of the burned face has been materially shortened by the use of the Guedel-Watters endotracheal anesthesia technic.

SUMMARY

1. Reconstructive surgery of old facial burns should be avoided if possible until complete healing has taken place.

2. The possibility of loss or impairment of various special sense organs may necessitate earlier surgery.

3. Adherent eyelids, nasal contours and ears are best released by use of Stent grafts.

4. Release of major contractions in areas difficult to immobilize and dress correctly may be accomplished by the use of intradermal grafts, tunnel grafts and small tube flaps.

5. The basal metabolic rate should be checked and, if low, thyroid medication should be forced.

6. Autogenous bacteriophage therapy is helpful if positive Rosenau tissue cultures can be made.

7. Early roentgen therapy is of benefit following surgery.

8. Endotracheal anesthesia is the method of choice in the reconstruction of old facial burns.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DR. S. J. SEEGER AND DR. UPDEGRAFF

DR. S. J. SEEGER, Milwaukee. The suggestion of Dr. Wells of combining the tannic acid treatment with the immersion treatment seems sound and offers one more facility in aiding these patients. Tannic acid solutions used clinically are strongly acid and highly astringent. Experimental work which I have done indicates that these solutions tend to cause swelling and edema of the tissues and a too rapid fixation of tannin at the surface. This is in accord with the experience of chemists in the leather industry. These disadvantages are overcome by neutralization to the same pH value as that of the blood. This neutralization is accompanied by no loss in tanning power. Clinical experience indicates that the previously observed beneficial effects of tannic acid are retained. Underhill demonstrated that loss of water is one of the important clinical factors in extensive burns. It is conceivable that the edema produced in the tissues by acid solutions of tannic acid may enhance the amount of water lost into the burned areas. In working out the technic of Dr. Wells, it should not be difficult to arrange to maintain a solution of fairly uniform percentage and pH value. My experience in the treatment of 300 burned patients indicates that there is no harmful effect on the normal skin adjacent to the burned area as a result either of spraying the surface or using wet packs of tannic acid. In the tanning industry men not infrequently fall into tubs of tan liquor and wear clothing and boots for many hours that are wet with tanning solutions. No studies have been made of these individuals but aside from the discoloration of the skin there is apparently no deleterious effect. Chemists do not agree on the best method of quantitative determination of tannin. The assumption that chemically pure tannic acid which is expensive contains nearly 100 per cent of tannin is incorrect. The so-called cutch, quebracho and wattle extracts in the group of commercial catechol tannins contain about 60 per cent of tannin. This is comparable to the amount of tannin contained in chemically pure tannic acid. The catechol tannins are inexpensive so that the amount to be used to make a 5 per cent solution in 100 gallons of water would cost only a few dollars. The rate of tanning varies with the extract and is important as it may well have an effect on the fate of some patients. I wish to warn against the error of assuming that any one method of treating burned areas solves all the problems associated with burns. The tannic acid method has many advantages but

much work remains to be done particularly for the patient with extensive granulating wounds and a low grade infection, who may be carried through the initial period of shock only to succumb later of exhaustion.

DR. FERRIS SMITH, Grand Rapids, Mich. The clinical results detailed by Dr. Wells in the use of the tannic acid bath in recent burns, and the equally excellent functional and cosmetic results demonstrated by Dr. Updegraff in the management of healed facial burns presenting the various accompanying tissue losses and contractures, merit approval. Dr. Wells emphasizes the three cardinal requirements in the management of extensive burns. Two of these are vitally essential and the third is usually a corollary. He has developed to a fine degree the use of a commonly employed agent which seals the surface to prevent dehydration and which maintains an asepsis so vital to the recovery of the patient. The keynote of his success is thoroughness and meticulous attention to every detail. His conception of proper care of these patients is a distinct contribution to emergency therapeutics. I agree in principle with most of Dr. Updegraff's discussion. His remarks relating to keloid and hypertrophied scar are an interesting innovation. His theory of the etiology and suggestion as to management will be eagerly considered by many practitioners. Sheehan advanced the theory that keloid is due to disturbance of the lymphatic circulation and obtained some results from the use of setons to establish new channels. He has also obtained some excellent results from the temporary implantation of radon along the edges of the incisions in cases in which operation has been performed. I would suggest the daily use of diathermy for minimum periods of one hour to hasten scar absorption and to improve circulation. This effort pays big dividends in producing better tissues and shortening the time of completing the repair. I cannot agree that the employment of the so-called Esser outlay for lid repair is the method of choice in the majority of cases. This was the best method available during the last two years of the war. Subsequently, John Wheeler contributed a technic employing points of temporary adhesion of the lids during scar organization and a split skin graft giving a smoother result. I use this method with full thickness grafts from another lid or the back of the ear. Dupuy-Detemps describes an excellent method of restoring a lid with all its normal elements except muscle.

DR. D. C. ENLOE, Sherman, Texas. The control of absorption of the toxic substance that is given off in the case of a burn was illustrated to me in a patient in whom more than half the body was burned. He was an electric lineman who received a charge of 60,000 volts. The clothing was burned from him, resulting in second and third degree burns of the entire right arm and the body from the neck to the bottom of the buttocks, extending two-thirds round the body and down the left arm to the elbow, and from the hip to below the knee entirely encircling the left leg and destroying the muscles on the outer aspect of the leg. Tannic acid treatment rendered the patient so comfortable that but little opiate was required. After the tanned skin and tanned muscles began to come away, debridement was done, but then there was another factor to combat—infection. Treatment instituted in this particular case convinced me that absorption from infection can be controlled by the use of wet metaphen dressings, 1:5,000. Boric acid dressings in such cases will produce toxemia, dressings with surgical solution of chlorinated soda will irritate healthy skin, saline dressings will not control the infection but wet metaphen dressings applied will clear up the infection. The grafts may be applied early on healthy granulating wounds, and the wet metaphen dressings 1:5,000 are continued until the lesions are healed. The grafts will grow faster, high granulations will not develop, scar tissue will be minimized, and good cosmetic results will be obtained.

DR. DONALD B. WELLS, Hartford, Conn. I have been interested in electrical contact burns. They are entirely different from these diffuse superficial burns which I have discussed. Electrical contact burns are always exceedingly circumscribed and are relatively deep and often it is possible to extirpate an electrical contact burn completely and do either an immediate suture or an immediate skin graft. I have had a large number of electrical contact burns. This form of treatment has proved most successful. I suggest that it be tried in suitable cases.

CARE OF ADVANCED CARCINOMA OF
THE GASTRO-INTESTINAL TRACT

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In the United States more than 100,000 persons die annually from malignant disease. The death rate for cancer throughout the country per hundred thousand of population was 63 in 1900 and 96 in 1929, an increase of 52 per cent. Cancer ranked sixth as the cause of death in 1900 and rose to second place in 1930.

At the twenty-second annual clinical congress of the American College of Surgeons held at St. Louis in October, 1932, a symposium was presented on the curability of cancer. Crile¹ reported that 4,059 patients seen at the Cleveland Clinic prior to 1928 had been traced. Of 726 patients seen with carcinoma of the stomach, thirteen survived operation three years and seven a period of five years, that is, a survival of 2.7 per cent of all patients seen. Of 841 cases of malignant tumors of the colon and rectum seen, eighty-nine patients survived for three years and forty-eight for five years, or 16 per cent of all cases seen.

Gatewood² reported that, in the ten year period 1920-1929, 417 patients were discharged from the Presbyterian Hospital in Chicago with the diagnosis of carcinoma of the stomach. Exploration was done in 209 of these. Thirty per cent were considered radically operable. Resection was done in fifty-eight cases with an operative mortality of about 18 per cent. Of the patients who survived operation, 46.1 per cent lived more than three years and 39.5 per cent lived more than five years. This is an operative survival of from three to five years, or 4.2 per cent of all patients seen.

These recent and authentic follow-up statistics serve to emphasize again the fact that the great majority of patients with a malignant condition of the gastro-intestinal tract still reach the surgeon in a stage of the disease so advanced that radical excision—the most hopeful type of therapy—is impossible. From the very nature of conditions it would seem that this state will persist and that palliation will consequently continue to be the only form of treatment for the overwhelming number of patients with carcinoma of the gastro-intestinal tract, for the following reasons:

1. In many instances the malignant process is insidious in onset and almost symptomless until far advanced or the patient all too frequently neglects early warnings.
2. Failure to make a thorough examination when medical advice is first sought is quite common.
3. There are difficulties in detecting and it is frequently impossible to detect early malignancy in certain situations by available methods of diagnosis.

SYMPATHETIC ATTITUDE

Unfortunately many physicians assume an attitude of despair toward the patient with advanced cancer. Thus the victim of inoperable cancer becomes the forgotten man in the medical world and may quickly fall a prey to the irregular practitioner or cultist. While it is true that a cure is seldom to be expected and their management is difficult and irksome, yet these hopeless sufferers deserve all the care and comfort that modern science affords. To neglect them is to acknowl-

edge defeat without due appraisal of the agents of relief at one's command. The desideratum is life in comfort while it lasts, not merely an uncomfortable existence.

SUPPORTIVE MEASURES

Essential are nourishing food of high caloric value, good hygiene and competent nursing together with rest and sufficient sleep obtained as necessary, by sedatives, analgesics or opiates. Tonics of iron and arsenic are indicated and in some cases whisky in 1 ounce (30 cc) doses, transfusions of blood cod liver oil with viosterol and once or twice weekly an ampule of calcium gluconate by vein, which, according to some clinicians, in large continued dosage is a potent analgesic. If the blood Wassermann reaction is positive antisyphilitic treatment is given.

Patients Admitted to the New York City
Cancer Institute

Year	Admitted to Clinic	Admitted to Hospital	Total
1923			318
1924	63	237	300
1925	465	547	1012
1926	341	615	956
1927	396	751	1147
1928	333	575	908
1929	377	467	844
1930	515	596	1111
1931	571	701	1272
1932	501	609	1110
Total	4500	5270	9770

Hospital Cases of Carcinoma

Year	Esophagus	Stomach	Colon	Sigmoid	Rectum	Anus
1923	16	21	1	4	10	0
1924	1	73	5	5	23	0
1925	24	72	12	11	38	6
1926	22	43	13	7	37	3
1927	4	49	5	4	28	1
1928	27	59	4	6	24	0
1929	16	29	2	1	10	2
1930	18	24	6	4	44	1
1931	15	61	4	8	6	0
1932	24	65	6	5	26	0
Total	167	490	58	50	270	10

Clinic Cases of Carcinoma

Year	Esophagus	Stomach	Colon	Sigmoid	Rectum	Anus
1923	1	1	0	0	0	0
1924	6	21	2	0	14	0
1925	4	22	6	0	12	1
1926	1	9	1	1	1	0
1927	5	7	0	1	2	1
1928	0	31	2	4	7	0
1929	0	4	1	1	6	0
1930	0	7	1	2	8	0
1931	3	13	2	3	16	0
1932	5	9	4	3	5	0
Total	25	132	19	15	71	2

Total cases involving gastro-intestinal tract
Per cent of total admissions

1.7
1.5

MATERIAL

During the period of nine years from its organization in 1923 to and including the year 1932, 10,070 patients have been admitted to the New York City Cancer Institute, a division of the Department of Hospitals of New York City. These figures are shown in the accompanying table. The incidence of gastro-intestinal malignant conditions included esophagus 192, stomach 622, colon 77, sigmoid 70, rectum 406, anus 17. All cases involving the gastro-intestinal tract constituted 1,384 or 13.7 per cent of total admissions.

Only a small percentage of these cases are radically operable on admission. Many of the patients have had surgical or radiation therapy elsewhere and are received into the hospital for custodial care. As the institute is municipal, no patient is denied admission. Consequently a large field for palliation is available.

Read before the Section on Gastro-Enterology and Proctology at the Eighty-fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

1. Crile, George. Surg. Gynec. & Obst. 66: 417 (Feb.) 1933.
2. Gatewood, M. A. Surg. Gynec. & Obst. 66: 442 (Feb.) 1933.

Except when obstruction, as of the esophagus, pylorus, colon or rectum is the cause, cachectic patients are barred from any type of active treatment, such as irradiation or surgery, and efforts are limited to the simplest measures of relief.

CARCINOMA OF THE ESOPHAGUS

Carcinoma of the esophagus comprises from 2 to 8 per cent of all cancer cases. The majority of these patients are men over 45, the incidence being six males to one female. The approximate location of the lesion in the esophagus is upper third, 20 per cent, middle third, 30 per cent, lower third, 50 per cent. Carcinoma constitutes about two thirds of all disease of the esophagus, and in cases that come to autopsy over 60 per cent show invasion of neighboring organs or metastases. Histologically, from 65 to 85 per cent of the neoplasms are squamous cell, the remainder being transitional cell type and adenocarcinoma. Moreover, grading of biopsies from squamous cell carcinomas of the esophagus indicates that, theoretically at least, 20 per cent or less are sensitive to irradiation.

The cardinal symptom of carcinoma of the esophagus is progressive dysphagia. The stenosis may finally reach the stage in which not even water can be swallowed, and the patient rapidly becomes emaciated and dehydrated—is being literally starved to death.

DIAGNOSIS

The history, the Wassermann test of the blood and a competent roentgen study establish the diagnosis and differentiate cancer from other obstructive lesions, such as cardiospasm, cicatricial contracture from caustics, syphilis, a diverticulum or external compression. If grave doubt exists as to the nature of the lesion, esophagoscopy is done and biopsy.

Clinicians are agreed that gastrostomy should be performed as soon as solids will not pass the stenosed lumen and nutrition begins to fail. "Early gastrostomy insures sufficient nourishment for prolonging life comfortably during radiation while the body is still capable of recuperation" (Kaplan). As a rule, we do the Janeway type of gastrostomy under local anesthesia. The goose-neck formed from a pedicle flap raised from the anterior wall of the stomach is fixed into the upper angle of the epigastric incision or is brought out through a stab wound to the left of the primary incision. A size 14 F catheter is inserted for feeding only, and there is practically no leakage from the stoma. In urgent cases or when only a small area of sound stomach is available, a Senn gastrostomy may be quickly established and is quite satisfactory. Mortality from these operations is very low. If the patient is dehydrated, it is important for him to receive dextrose in physiologic solution of sodium chloride by hypodermoclysis before operation.

As soon as the patient has recovered from the operation and the condition has been controlled by a regular check-up of the blood picture, protracted high voltage roentgen irradiation is directed to the area of the lesion. It is difficult to evaluate this form of therapy, but I feel that it is of definite benefit in relieving pain, has a favorable psychologic effect and possibly slows the malignant process.

A properly performed gastrostomy with subsequent adequate feeding works a dramatic improvement in a large number of cases. Gain in weight, improved morale and relief of symptoms enable many patients to live several months in comparative comfort.

We have not used radium within the carcinomatous lumen of the esophagus of patients with advanced disease, feeling that the ordeal and trauma (possible hemorrhage or perforation) caused by its application would do more harm than any possible benefit that could reasonably be expected. However, Guisez³ reported that of 270 patients treated with radium within the esophagus, thirty lived more than eighteen months. No evidence of a malignant growth was present in twelve of these patients after more than eighteen months, in four after three years, in four after four years, and in one each after five, ten and eleven years. Presumably the lesions in his cases were not of the advanced type under discussion.

CASE 1—J. M., a white man, aged 54, complained of progressive dysphagia until not even water could be swallowed when he was admitted, Sept. 20, 1932. He was anemic and emaciated and regurgitated all food and fluids. Roentgenograms showed a defect typical of a malignant condition in the lower third of the esophagus and an aneurysm of the aorta. The blood Wassermann reaction was 4 plus. Hypodermoclyses of dextrose in saline solution were administered. Gastrostomy performed, September 22, was followed by high voltage roentgen therapy over the mediastinum, anterior and posterior, and antisyphilitic treatment was administered. The patient improved rapidly, gaining 20 pounds (9 Kg.), and was very comfortable for four months. Then he deteriorated rapidly until he died, March 4, 1933.

CARCINOMA OF THE STOMACH

The stomach is the commonest site of carcinoma in the digestive tract. It is noteworthy that some patients have very few symptoms until the lesion is far advanced. Owing to its inaccessibility, early detection of gastric involvement with malignant disease is most difficult. Our chief reliance for diagnosis is fluoroscopy and roentgenograms. Gastrostomy is also a useful measure in the rare case of carcinoma of the cardia, but the majority of advanced cases develop obstruction at the pylorus and are radically inoperable. In these circumstances we usually perform gastro-enterostomy and, if deemed advisable, implant gold seeds of radon into the malignant area. This gives a high degree of palliation and is well worth the effort.

CASE 2—M. Y., a white woman aged 58, married, admitted Oct. 31, 1925, complained of indigestion and epigastric pain. She was well nourished, not anemic and a nodular mass was present in the epigastrium. A roentgen examination showed an irregularity of 3 cm. along the greater curvature of the stomach, the pars media with failure of visualization of the pyloric portion for a distance of 5 cm. At two and six hours a residue of one fourth of the meal was proximal to the lesion. Exploration, November 10, showed that the neoplastic involvement was as extensive as the roentgenograms indicated. A posterior isoperistaltic gastro-enterostomy was done and after biopsy, which showed adenocarcinoma, fifteen seeds of 0.3 millicurie of radon each were implanted into the neoplastic area. On discharge, Jan. 24, 1926, the patient had made an uneventful recovery from the operation, had gained in weight and had been practically symptomless. Five months later she was eating well and maintaining her nutrition, but the tumor mass was extending. In September, 1928, she died from the malignant growth at her home two years and ten months after coming under treatment.

CARCINOMA OF THE COLON

Disturbance of bowel function and progressive constipation are the leading symptoms of carcinoma of the colon, particularly with involvement of the splenic flexure and the rectosigmoid, two naturally narrow

³ Guisez, J. Bull. et mem. Soc. med. d. hop. de Paris 47: 908-917 (June 1) 1931.

points. Indeed, acute obstruction is the first definite symptom in some cases. Increasing secondary anemia is characteristic of involvement of the cecum.

Important aids in diagnosis are a "scout" x-ray film, fluoroscopy while the barium suspension is being administered, employment of the combined method of Fischer, whereby films of the colon are taken after partial evacuation of the opaque enema and inflation of air, and proctosigmoidoscopy.

If other measures fail in the presence of acute obstruction, cecostomy of the Witzel type, done under local anesthesia, affords prompt relief by decompressing the colon until exploration can be safely undertaken.

Palliative surgery virtually resolves itself into short-circuiting operations or colostomy. For radically inoperable carcinoma of the cecum and ascending colon, ileocolostomy (distal ileum to the transverse colon) is indicated. For obstruction of the transverse colon by a neoplasm, possibly involving the stomach, the approved procedure is cecosigmoidostomy or better, end-to-side ileosigmoidostomy and fixing the distal loop of ileum into the wound as a stoma to prevent stasis within the short-circuited loop.

Short-circuiting of an irremovable tumor of the splenic flexure or descending colon is most easily effected by a lateral anastomosis between the transverse colon and the sigmoid.

CASE 3—C. H., a white woman, aged 57, married, admitted Dec. 6, 1930, complained of acute intestinal obstruction. She was anemic and emaciated and was belching gas; the abdomen was so tensely distended and tympanic that palpation was unsatisfactory. Immediate cecostomy decompressed the colon and thirteen days later at laparotomy the descending colon and mesenteric lymph nodes were found to be involved in an extensive, fixed adenocarcinoma. The transverse colon was united to the sigmoid by a broad lateral anastomosis. The patient regained weight and strength and lived in comfort until January, 1932, a period of fourteen months, when ascites and other signs of general abdominal carcinosis developed to which she succumbed at her home ten months later.

CARCINOMA OF THE SIGMOID

The sigmoid flexure is the site of greatest incidence of carcinoma in the large bowel. In this situation it must be differentiated chiefly from diverticulitis by competent roentgen study. Slightly over 2 per cent of cases of carcinoma of the sigmoid are associated with diverticulitis. This small percentage suggests that the relationship is incidental and not causal. However, bleeding in diverticulitis is a rare symptom which I have observed in only three cases, so when hemorrhage occurs in a patient known to have diverticulitis a malignant condition should be suspected.

Because of its favorable anatomy, carcinoma of the sigmoid is usually amenable to radical surgery. If extensive peritoneal involvement or other metastases preclude this procedure, colostomy should be established in the transverse colon. It is an important working rule to make the artificial opening at a safe distance from the tumor lest the stoma become involved in the neoplasm.

CASE 4—N. S., a woman, aged 60, unmarried, admitted Sept. 12, 1930, complained of constipation pain in the left lower quadrant of the abdomen and swelling of both legs and ankles due to varicose veins. Her general condition was fair. An adenocarcinoma occupied the anterior fourth of the bowel wall beginning 5 inches above the surface of the skin and extending upward 2 inches into the pelvic colon. Radical operation was refused. To date the patient has received five courses of high voltage roentgen therapy and two applications of radon. Two

polypoid tumors, one at the 6 and the other at the 8 inch level, have been removed by the electrical snare passed through a proctoscope. Both of these tumors were adenocarcinoma. At present two and one half years after beginning treatment, the patient is free of symptoms and there is no local evidence of activity of the carcinoma. She is in good health and works regularly as a laundress.

CARCINOMA OF THE RECTUM

Next to the stomach, the rectum is the commonest site of carcinoma of the alimentary canal. Although digital palpation and sigmoidoscopy, with biopsy in doubtful cases, establishes the diagnosis in practically all cases of malignant conditions involving the recto-sigmoid and rectum proper, many patients still reach the surgeon too late for radical excision. Unfortunately, this is frequently due to reliance on an indirect roentgen study which visualizes poorly early lesions of this bowel segment within the pelvic girdle instead of palpation and direct inspection of this accessible field.

When obstruction is present or frequent discharges are annoying and depleting in radically inoperable cases, colostomy under local or spinal anesthesia is indicated, is most beneficent and affords an avenue for effective irrigation. The loop type of colostomy is usually established through the left rectus muscle, as it is simple of execution, requires little manipulation and bears practically no mortality. A colostomy under dietary control is much less objectionable than is popularly believed. The wearing of a receptacle should be avoided if possible.

A cycle of high voltage roentgen therapy is frequently successful in checking rectal hemorrhage, sometimes even retarding the progress of the disease. The rays are applied through two anterior and two posterior pelvic portals and a perineal field. Each area receives a total of from one to one and one-half erythema doses, one-fourth dose per treatment. Governed by the condition of the patient, one or two areas are irradiated daily.

RADIUM

The institute possesses 2 Gm. of radium in solution and 40 mg. in element. In most instances radon is used for treatment, in either gold seeds or platinum tubes and needles. Treatment is given by surface applicators made up of tubes or in cases of carcinoma of the rectum the tubes are inserted within the malignant bowel lumen as a tandem in a tube of pure rubber or when the lumen is sufficiently large with a proctostat. When accessible the tumor is treated most satisfactorily by interstitial seed implants inserted directly by trocar. In reckoning dosage it is generally considered that the effective irradiation of the implants is three times that of an equal amount of radon applied to the surface, i. e. intraluminal.

A small intraspinal dose of procaine hydrochloride (from 40 to 70 mg.) is a most satisfactory form of anesthesia.

After the reaction from the irradiation has subsided the tumor in many instances shrinks noticeably or is held in abeyance, the discharge is reduced and the pain is relieved all for varying periods.

CASE 5—D. T., a white man, aged 57, admitted Nov. 11, 1930, for one year had noted rectal bleeding which had increased markedly during the last four months. He was slightly anemic but otherwise in good condition. The lateral and posterior walls of the rectal ampulla were infiltrated with a large fixed adenocarcinoma. Following sigmoidectomy he received high voltage roentgen therapy and intratumoral seed implants of radon. He was ambulatory, was practically symp-

tom free, and maintained good health until February, 1933, when pelvic pain developed. A subarachnoid injection of 1 cc of absolute alcohol administered, March 3, promptly relieved this symptom and the patient continues in good general condition, two years and six months after beginning treatment.

EPITHELIOMA

Epithelioma of the anus is comparatively rare. It usually arises in the mucocutaneous lining of the anal canal, but occasionally it may develop at the opening of an old fistula or in operative scar tissue. It is generally of the squamous cell type and tends to encircle the anal canal early and to infiltrate beyond its margin. Metastasis is commonly through the perineum to the inguinal lymph nodes. Differentiation of this exquisitely painful lesion is to be made chiefly from indurated fissure (biopsy) and primary chancre (dark-field examination for *Spirochaeta pallida*). The preferable method of treatment of this highly malignant neoplasm is irradiation by intratumoral seed implants of radon. In some cases radical excision should be done from six to eight weeks after the beneficial effects of the irradiation have been obtained. The inguinal lymph nodes are treated by applicators of radium and high voltage roentgen therapy. Neglected cases may require colostomy in addition to irradiation for the relief of pain.

ELECTROSURGERY

The high frequency cutting current is a new and valuable agent with which to combat cancer. The quickest and most satisfactory relief for a large fungating growth of the rectum, which protrudes and involves the perirectal tissues, is to ream it out with electrosurgery and then implant the wound at regular intervals with gold seeds of radon. The palliation resulting is well worth the effort.

PAIN

To the lay mind, carcinoma denotes pain. This may be true or not, depending on the location of the tumor and the structures involved. In malignancy of the gastro-intestinal tract pain is usually a late symptom except in many cases of carcinoma of the stomach and almost always in epithelioma of the anus. This is unfortunate, for were it an early manifestation, patients would seek relief at an earlier phase of the disease.

Pain in the chest is a common complaint in advanced carcinoma of the esophagus. It is due more to the stasis of food and fluids above the constriction than to the tumor. Proof of this is the marked relief following gastrostomy. High voltage roentgen therapy seems also to exert an analgesic effect.

Gastric pain is frequently allayed by drugs possessing a local anesthetic or an analgesic effect, such as ethyl aminobenzoate or orthoform. When other measures fail, morphine or dihydromorphine hydrochloride in adequate dosage as needed becomes the sheet anchor.

INTRASPINAL ALCOHOL FOR PAIN

In 1931, Dogliotti⁴ proposed subarachnoid injections of absolute alcohol for relief of peripheral pain, employing it in forty-five cases with marked relief. Recently he visited the institute and kindly demonstrated his technic to us. For visceral and abdominal pain injection may be made between the first and second lumbar vertebrae. With the patient resting on the side opposite to that affected, the alcohol in a tuberculin syringe is injected very slowly, drop by drop a

total of from 0.2 to 1 cc, varying with the nature of the case. The patient remains in this position for twenty minutes and then is rolled on his back, where he rests for two hours. Following the injection, zones of anesthesia or hyperesthesia may appear, and cutaneous or tendon reflexes may be diminished or lost. The motor effects are mild but temporarily the knees may bend under the patient when he stands or tries to walk. These phenomena disappear in a few hours or, at most, days. Usually there is no disturbance of bowel or bladder function, although in one of our cases there was retention of urine.

If the pain is not relieved in a fortnight the injection is repeated at the same level of the spinal cord, but with the patient resting on the opposite side. The rationale of the treatment is that absolute alcohol, being lighter than the spinal fluid, rises and follows the line of exit of the spinal nerves, hence the necessity of keeping the patient immobilized for some time after the injection. The spinal fluid is at first under increased pressure and the cell count is increased, but it returns to normal in ten days. The relief of pain on the average lasts for six months.

We have employed the method with gratifying results in seven cases of malignancy presenting lower abdominal and rectal pain.

CASE 6—Mrs. M., aged 44, had a colostomy performed for inoperable carcinoma of the rectosigmoid in April, 1931. Eighteen months later she began to experience pelvic pain which required opiates for relief. Nov. 26, 1932, 1 cc of absolute alcohol was injected through the third lumbar space and repeated five days later. Five months later the patient was still free of pain, required only mild sedatives and no opiates, although the cancer was extending.

PROGNOSIS

The question of prognosis does not enter in the class of cases under discussion as all patients die of the malignant condition or of intercurrent disease. Schreiner and O'Brien⁵ of the New York State Institute for the Study of Malignant Disease reported results in 200 cases of carcinoma of the rectum which were treated by irradiation, but without surgery except colostomy for obstruction, and electrocoagulation for selected cases involving the anal ring and the lower part of the rectum. In the group of patients in whom the growth was limited to the wall of the bowel (radically operable), 17 per cent remained well five or more years. Among patients with malignant infiltration of surrounding tissues and fixation—mechanically inoperable—39 per cent had palliation of from one to four years. The third group with metastases disseminated in the liver and lymph nodes of the mesentery or groin, all died, only a few obtaining any palliation from the treatment.

Individualization is essential in the treatment of advanced carcinoma of the gastro-intestinal tract. The blood picture is an important guide and should be observed at frequent intervals. A low hemoglobin and a white cell count under 6000 preclude roentgen therapy which under these circumstances, tends further to vitiate the blood, unless the balance can be restored by blood transfusions or other measures.

CONCLUSION

Our experience in a rather large group of cases justifies the conclusion that treatment by palliative surgery

⁴ Dogliotti, A. M. *Rev. neurol.* 2: 485-486 (Oct.) 1931.

⁵ Schreiner, B. F. and O'Brien, J. P. *Am. J. Roentgenol.* 25: 64 (May) 1931.

irradiation and suitable supportive measures prolongs life in comfort in many patients suffering from advanced malignancy of the gastro-intestinal tract

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ABSTRACT OF DISCUSSION

DR GEORGE E BINKLEY, New York The treatment of advanced gastro-intestinal carcinoma deserves careful consideration. Patients with advanced disease may last for only a few months or may live for four or five years. In most instances their burden can be greatly lessened and life made more pleasant by appropriate treatment. This paper also emphasizes that in the treatment of cancer the object may be either a clinical cure or palliation. Clinical cures are impossible in many cases, owing to the extent of the disease or to the physical condition of the patient. Under these unfavorable circumstances palliation is the method of choice, as it offers more than the most radical methods of treatment. Dr Yeomans has taken up the chief problems, namely, the relief of obstruction, growth restraint or regression of the cancer, and increasing the patient's general physical condition. There is another factor which should not be overlooked, that of keeping up the patient's morale. It is more easily accomplished when the patient is unaware of his pernicious disease. It is a serious mistake to tell a patient that he has advanced cancer and that nothing of value can be accomplished by treatment. Short-circuiting operations for the relief of obstruction are of value and should be employed. The type of operation is largely governed by the location of the tumor, the pathologic changes, and the condition of the patient. Radiation therapy offers many of these patients a high degree of palliation. External irradiation by roentgen rays or radium has the largest field of usefulness. In accessible locations, such as the rectum, interstitial irradiation is often of value. Radiation therapy when properly employed produces a varying degree of growth restraint and decreases infection of the sloughing mass thereby lessening the local and general symptoms. I have not had any experience with the injection of alcohol. The method offers possibilities of relieving low abdominal pain.

DR HARRY H BOWING, Rochester, Minn. My attention has been directed to what can be accomplished through well planned or cautious irradiation. Treatment in advanced cases should be applied with the hope of palliating or reducing as much as possible the existing or potential distressing complications. For example, usually bleeding is effectively controlled. The serosanguineous discharge with the characteristic odor is favorably influenced. The pain has also stopped in many cases. Initial irradiation should be adequate. However, every endeavor must be made to avoid the possible complications of radionecrosis or severe systemic reaction. In many cases, internal disease of the various systems may be of sufficient importance to demand treatment. As a rule surgical therapy for cure is not to be considered in the treatment of advanced cases, and yet it is the most effective method when skilfully applied in selected cases. Palliative surgical therapy or surgery of approach to radium therapy is necessary in some cases. The attitude of despair toward the patient with advanced carcinoma is regrettable. Some responsible party should be instructed regarding the plan of attack and the probable prognosis. To the consideration of cases of carcinoma of the esophagus may I add the technique of dilation is recommended by Drs Plummer and Vinson. I have not employed the method of implantation of gold seeds in the treatment of advanced cases of gastric carcinoma, but the encouraging observations of others will serve as a guide in the future. Polyps in the stomach, colon, sigmoid and rectum demand more consideration. In some cases it seems obvious that the carcinoma bears a direct relationship to the polyp. Evidently whenever possible the polyp or polyps should be removed. Electrosurgery is a valuable adjunct in treating rectal carcinoma in that it controls bleeding and thus facilitates the intratumoral implantation of seeds or needles. It helps to obtain a sterile field and reduces the bulk of the tumor permitting more adequate radium treatment of the base of the malignant neoplasm. Morphine should be withheld as long as possible. As a rule the simple sedatives either alone or in combination with the barbituric acid hypnotics are of

distinct service. Any preparation that possesses pain-relieving properties without the tendency to habit formation should be preferred. Local applications of mild rubefacients, as well as application of warm moist or dry heat to the painful body surface affords much relief. I am deeply interested in the report concerning the subarachnoid injections of absolute alcohol for pain.

DR LOUIS J HIRSCHMAN, Detroit I will take issue with some of my friend's remarks on the management of advanced cases and I want to say a word about the hopelessly advanced ones. These patients come after a laparotomy and when the liver is hopelessly involved, and the carcinoma of the intestinal tract, particularly of the large bowel, is adherent to large vessels. Surgical therapy here is absolutely out of the question except possibly for the relief of obstruction. I have seen these patients subjected to radiation and particularly to high voltage roentgen therapy, probably as a means of keeping up their morale or as a means of palliation. Patients suffering from carcinoma for any length of time return from the roentgen treatment mentally and physically unhappy, nauseated, depressed and miserable. I ask whether it is fair to subject a patient to a treatment as drastic, uncomfortable, depressing and nauseating as high voltage roentgen therapy, when one knows that it is not going to help him a bit. Some of my friends will say, "We want to make them as comfortable as possible as long as we can," but they withhold morphine till the last minute. How many physicians, if suffering from a hopelessly inoperable carcinoma of the bowel, would not want relief? It doesn't take the patient long to know that his condition is hopeless. Isn't a physician derelict in his duty when he fails to give relief by withholding the sedative or narcotic? If there is any one place in the practice of medicine for the employment of morphine, it is for the poor unfortunate patient who is hopeless and in distress and who cannot hope for more than relief.

DOES QUININE IN THE INDUCTION OF LABOR HAVE A DELETERIOUS EFFECT ON THE FETUS?

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Quinine for many years has been credited with oxytocic properties, but there appears to be some difference of opinion as regards its efficiency when so employed. Sollmann¹ states that "moderate doses of quinine stimulate, and high doses depress, the contractions and tone of the uterus, excised and in situ. The stimulant action increases with the excitability of the uterus in the process of pregnancy. Clinically, quinine has little or no effects unless the pains have started. It is therefore ineffective for inducing premature labor." He further states that it is used clinically to stimulate weak labor pains but adds that it is often difficult to prove the clinical response after oral administration because of the slow absorption.

Dodek,² working in the same institution under Sollmann's guidance and employing a new recording apparatus, found that the drug had no effect when administered to two pregnant women at term and caused only feeble and transient pains in the third patient. In established labor he noticed a slight increase in the force of the contractions but no appreciable effect on the course of labor. He thinks that its value has been

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¹ Sollmann, Torald. *Manual of Pharmacology*, ed. 4. Philadelphia: W. B. Saunders Company, 1912, p. 53.

² Dodek, S. M. A New Method for Graphically Recording the Contractions of the Parturient Human Uterus. *Surg., Gynec. & Obst.* 55:45 (July) 1935.

overestimated. However, it must be borne in mind that his deductions are based on a small number of cases tested and hence cannot be accepted as final.

Bourne and Burn,³ studying labor pains by means of an intra-uterine bag connected to a recording apparatus, found that quinine when given to a woman in labor "showed very little effect of a kind calculated to hasten delivery." The pains were more frequent but the height of these contractions was less than before. "It is evident that the powerful action of quinine on isolated portions of smooth muscle when suspended in a bath is little guide to its effect on a uterus in labor, and that its action on the parturient human uterus has been much overstressed." They also feel that it has little or no value in the induction of labor and quote the experiments of Rubsamen in corroboration.

Schubel⁴ feels that a sharp distinction must be made between the action of the drug on the isolated but living uterus and the uterus in situ. He found that in cats the intact uterus is caused to contract definitely in from one to two hours by a dosage of from 1 to 2 mg per kilogram of body weight but that larger doses cause a paralysis. He holds that in women small doses, from 1 to 2 mg per kilogram of body weight, are to be used and that such doses sensitize the uterus to the action of posterior pituitary.

Williams⁵ states that in secondary uterine inertia the administration of 15 grains (1 Gm) of quinine sulphate by mouth, or the same amount of the hydrochlorate hypodermically, "is promptly followed by a marked increase in the frequency and efficiency of the uterine contractions," but that, if this amount produces no effect, further administration is useless. He also states⁶ that the result of attempts to induce labor with castor oil and quinine have been very uncertain but that when supplemented with solution of pituitary according to Watson's method, labor developed in the majority of instances. He lost several children when employing this technic and ascribed these fatalities to the pituitary extract, even when given in doses of only 2 to 3 minims (0.1 to 0.2 cc), as the heart tones disappeared after tetanic contractions had developed. Hofbauer's technic, on the contrary, had no deleterious effect on the child in his experience, so that it would appear that the bad results in the first series could not be charged to the quinine that was administered.

De Lee,⁷ in discussing uterine atony, says that quinine should seldom be employed, as it often causes premature discharge of meconium and annoying postpartum oozing. In induction of labor, he uses castor oil and one 3-grain (0.2 Gm) dose of quinine, supplemented by other measures.

It thus appears that there is considerable uncertainty, both pharmacologically and clinically, as to the efficacy of quinine as an oxytocic. All observers seem to be agreed that it will not of itself initiate uterine contractions, although Schubel⁴ states that thirteen out of thirty-nine women aborted after quinine therapy alone, the dose varying from 0.5 to 1 Gm. Sollmann¹ states that abortion has sometimes followed toxic doses, which he ascribes to the general toxicity rather than to direct

uterine action. It is a matter of common knowledge in malarial sections that quinine can be administered in therapeutic doses to pregnant women without the risk of producing abortion or premature labor. As previously stated, the drug is frequently employed to stimulate weak contractions in inertia of the uterus, although the experiments of Dodek and of Bourne and Burn indicate that confidence in its efficacy under these circumstances is not well founded. Sollmann¹ states that when thus used its effect is generally perceptible within forty minutes and that this effect is more persistent than with solution of pituitary and is safer, as there is no danger of producing tetanic contractions. He also affirms that it is often difficult to detect any clinical response after oral administration, owing to the slow absorption. This authority, incidentally, feels that, owing to slow absorption from the rectum, quinine, as used in the Gwathmey method, does not counteract the depressant action of the ether, unless through the effect of local irritation. Mathieu⁸ feels that the quinine can be eliminated from the Watson method with no difference in the results. In the last 120 cases of a series of 320, quinine was not employed, and his results were the same as in the 200 in which it was administered.

What evidence is there to suggest that there may be a possibility of danger to the fetus from quinine administered to the mother? It is a matter of common knowledge that meconium is frequently noted in the amniotic fluid when the membranes are ruptured spontaneously or artificially after the administration of quinine in the medical induction of labor. Dilling and Gemmell⁹ in their first paper, reviewing 765 collected cases of induction in which quinine was used, stated that they did not find any significant difference in the percentage showing meconium in the amniotic fluid, as compared to a control series. However, in their second paper¹⁰ they state that in 100 cases of normal labor meconium was noted at the time of the rupture of the membranes in 8 per cent, while in patients in whom labor was induced by the aid of quinine it was present in 34.6 per cent. They feel that it was probably due to relaxation of the sphincter or to intra-uterine asphyxia rather than to stimulation of the intestinal musculature of the fetus. Meconium was present more often after quinine alone than after quinine plus solution of pituitary. These observers made elaborate quantitative and qualitative analyses of the maternal blood and urine, the amniotic fluid, the fetal urine and tissues of still-born children, in order to determine the presence and concentration of quinine following its administration to the mother. They found the highest concentration of quinine in the maternal tissues six or eight hours after the first dose. It was found in the amniotic fluid from nine to eleven hours after administration, and in the urine of the fetus from six to twelve hours after the last dose was administered to the mother. They feel that quinine in a concentration of 1 to 100,000 or over in the maternal or fetal blood cannot be regarded as devoid of risk to the fetus. In

3 Bourne A W and Burn J H Action on the Human Uterus of Anesthetics and Other Drugs Commonly Used in Labor Brit M J 27 (Jul. 19) 1930

4 Schubel Konrad Pharmacologic Basis for the Action of Quinine on the Uterus Munchen med Wchnschr 78 1681 (Oct 2) 1931

5 Williams J W Obstetrics New York D Appleton & Co 1932 p 819

6 Williams Obstetrics p 461

7 De Lee J B Textbook of Obstetrics Philadelphia W B Saunders Company 1932 p 620

8 Mathieu Albert Observation of the Use of Quinine and Pituitary Extract in the Induction of Labor Am J Obst & Gynec 13 223 (Feb.) 1927 Mathieu Albert and Sichel M S Further Observations on Use of Castor Oil Quinine and Pituitary Extract in Induction of Labor Surg Gynec & Obst 53 676 (Nov.) 1931

9 Dilling W J and Gemmell A A A Preliminary Investigation of Fetal Deaths Following Quinine Induction J Obst & Gynec Brit Emp 36 353 (summer) 1929

10 Dilling W J and Gemmell A A Further Investigations of the Death of the Child Following Induction of Quinine J Obst & Gynec Brit Emp 37 528 (autumn) 1930

order to obtain a sufficient concentration in the maternal blood to affect the uterus, they feel that three 10 grain (0.65 Gm.) doses at hourly intervals are requisite. They state that concentrations of quinine which may be toxic to the fetal tissues may persist in the fetus many hours after the wave of secretion in the maternal urine has subsided. This is probably due either to the slow return of the quinine from the fetus to the mother or to inability of the fetal kidneys to excrete concentrations over 1 to 6 000. It is to be noted that quinine, when used in the induction of labor, is given at much shorter intervals than when used in the treatment of malaria, and the lack of deleterious effect under the latter circumstances must be due to the lower concentration in the maternal blood because of the longer spacing of intervals between the doses.

The first instance of fetal death ascribed to the administration of quinine to the mother in the induction of labor was reported by Gellhorn¹¹ in 1927. His patient received 2 ounces (60 cc.) of castor oil at 7 a. m. and 10 grains (0.65 Gm.) of quinine sulphate at 9 and 11 a. m. and 1 p. m. No labor pains developed. Toward evening all fetal movements ceased, and no fetal heart tones could be detected after this time. The usual signs and symptoms of fetal death manifested themselves. Fifteen days later, mild pains developed which were intensified by the use of a Voorhees bag. A macerated child was delivered. Examination of the placenta and autopsy of the child revealed nothing to account for the fetal death. The Wassermann reaction was negative and there was no evidence of fetal or maternal syphilis. A similar case was reported verbally to Gellhorn by J. L. Baer and also one by F. W. Lynch. In the latter instance castor oil, followed by two 10 grain doses of quinine, was administered and was repeated in three days and again two days later. Labor did not develop. Eight days after the last dose the patient reported that no fetal movements could be felt and no fetal heart tones could be elicited. She subsequently delivered a still-born child.

Torland¹² reported the case of a woman with a previously unknown idiosyncrasy to quinine who developed dyspnea, urticaria, and a mottled purplish red skin eruption two hours after administration of 10 grains of quinine sulphate following the castor oil as in the Watson method. Shortly after the quinine was given, strong fetal movements were felt which then ceased. No fetal heart tones could be detected (there was no note as to the time they were last heard before the treatment was commenced). Satisfactory labor developed and she was delivered ten hours after the administration of the quinine by the aid of an easy low forceps operation. Autopsy of the baby showed blood in both pleural sacs, the pericardium and the peritoneum, also an acute nephritis. Dilling and Gemmell⁹ in their first paper reviewed 765 collected cases of medical induction and of the forty-six stillbirths in this series they feel that eight (including those reported by Gellhorn and Torland) were probably due to the quinine. In these instances the heart tones ceased within thirty-six hours of the administration of the quinine and before the onset of labor. In their second paper¹⁰ they analyzed twenty-six cases of fetal death following medical induction including the use of quinine. In seven instances the only plausible explanation

is that death was due to the quinine. Five deaths are listed as doubtful, and the other fatalities were definitely ascribed to other causes. In the whole series reviewed, the positive and doubtful cases constitute 13.6 per cent of the total number of babies delivered. In a control series, no cause for the fetal death could be found in 13.4 per cent of the total number of babies. As these rates are so nearly identical, they conclude that, although there is scientific evidence available indicating that there is a risk to the child when labor is induced by the aid of quinine, from a practical point of view this risk is so small that a labor so induced is at least as safe as an unassisted delivery. In line with this view, Gutmacher and Douglas,¹³ in reporting 120 inductions according to Slemmons' method of using castor oil and quinine followed by rupture of the membranes, report that none of the seven fetal deaths can be ascribed to the induction of labor.

I have observed three instances in my service at Charity Hospital in each of which it appears logical to conclude that the quinine was responsible for the fetal death. A brief report of these cases follows.

REPORT OF CASES

CASE 1.—In a primipara in her early twenties, labor was induced because she was a few days past term. One ounce (30 cc.) of castor oil was given at 6 p. m. followed by an enema at 7 p. m. Ten grains of quinine sulphate was given at 8 o'clock and was repeated at 10 and 12 p. m. Labor pains developed about 1 a. m. and the cervix was fully dilated at 5 o'clock. The membranes were ruptured artificially at this time by the intern, and the amniotic fluid was found to be deeply stained with meconium. Unfortunately, no attempt to hear the fetal heart tones was made. The second stage progressed satisfactorily, and the head reached the perineum shortly after 6 a. m. As there was some slowing of the pains at this time, 0.5 cc. of solution of pituitary was given, apparently on insufficient indications. Satisfactory but not over-strong pains developed and a still-born baby was delivered at 6:30. There was no anomaly of the cord or placenta and no evidence of premature separation of the placenta. The patient was definitely not syphilitic and autopsy on the child disposed of no lesions except petechial hemorrhages in the brain, suggesting asphyxia. I feel that this death can be ascribed to the quinine and not to the solution of pituitary as the pains after the latter drug was given were not violent, the uterine contractions did not become tetanic and autopsy did not disclose any evidence of intracranial hemorrhage or other injury.

CASE 2.—Induction was attempted in a multipara because of undue prolongation of pregnancy. The full treatment with castor oil, quinine and solution of pituitary was employed according to Watson's method, three 10 grain doses of quinine being used but with 0.25 instead of 0.5 cc. doses of solution of pituitary. No labor pains developed but in the afternoon about sixteen hours after the last dose of quinine the patient reported that fetal movements had ceased. Careful and repeated auscultation failed to elicit the heart tones. A few days later spontaneous labor developed and a macerated fetus was delivered. As in the first case nothing could be found to account for the death of the child and the evidence appears very conclusive that the quinine was the agent responsible for the fatality.

CASE 3.—In a young primipara whose pregnancy had advanced a few days past the expected date of delivery labor was induced as outlined in case 2. Satisfactory pains developed and the patient delivered spontaneously after an easy labor. The fetal heart tones disappeared early in the first stage. Labor pains were normal throughout and at no time were they unduly severe. Autopsy disclosed nothing to account for this fatality. Qualitative chemical tests by Dr. Emmerich von Harram of the Department of Pathology of the Charity Hospital disclosed the presence of an appreciable amount of quinine in the brain.

11 Gellhorn, George. Can Quinine Kill the Fetus in Utero? *Am. J. Obst. & Gynec.* 13:--9 (June) 1927.

12 Torland, Torleif. Fetal Mortality After Induction of Labor by Castor Oil and Quinine. *J. A. M. A.* 80: 1190 (April 14) 1925.

13 Gutmacher, A. F. and Douglas, J. C. Induction of Labor by Artificial Rupture of the Membranes. *Am. J. Obst. & Gynec.* 21: 4* (April) 1931.

tissue. In the light of the experimental work of Dilling and Gemmell, it appears logical to ascribe this death to the quinine used in the induction.

CONCLUSION

It appears that one cannot ascribe to quinine a role of any particular importance in the induction of labor. It is certain that it has no such action when employed alone, and it is questionable whether it is of any value when used in conjunction with other drugs or procedures as in Watson's and Slemmons' methods. In view of the reported fetal deaths, which can in all fairness be charged to the quinine used, it would seem to be wise to discontinue entirely the use of this drug in the induction of labor or at least to employ it in smaller doses. There seems to be little doubt that equally good results will be obtained without subjecting the child to the added risk of poisoning from the quinine employed.

931 Canal Street

ABSTRACT OF DISCUSSION

DR F. H. FALLS, Chicago. Quinine ordinarily is not a very toxic drug. Adults can take large doses of it, and there are on record cases in which as much as 600 grains (39 Gm.) has been given an adult in twenty-four hours without any deleterious effect. One would therefore suspect that in the doses ordinarily given for the induction of labor, namely of three to 10 grain (0.65 Gm.) doses there would not be any danger to the fetus. However, when quinine is given, some of these babies die suddenly. The height of the concentration of the quinine in the maternal blood after administration occurs in about five or six hours and therefore it would seem that deaths occurring as late as sixteen and twenty-four hours after the administration could not reasonably be ascribed to the drug. The fact that small doses stimulate uterine contraction and larger doses tend to inhibit contraction is a strong argument for the use of small doses. I analyzed 100 cases of induction of labor by the use of a modified Watson method and found that in these 100 cases the fetal mortality was 10 per cent uncorrected. Then I analyzed a thousand cases in which the labors had started spontaneously. The mortality was 58 per cent uncorrected. At first glance it would seem that the quinine was responsible for an increase of about 4 per cent but in those cases in which quinine had been given twenty-five out of the hundred were cases of toxemia, and of the other seventy-five there were many in which serious pathologic conditions were present, such as postmaturity, poorly compensated heart cases and diabetes. Therefore the evidence that quinine is detrimental to the fetus is not convincing. I am convinced that quinine during labor is dangerous or may be dangerous. I think that it is possibly due to an idiosyncrasy of certain women to quinine. I have seen stormy pains in within fifteen minutes after the oral administration of 10 grains of quinine so stormy that the women had to be given an anesthetic and the baby delivered by forceps in order to prevent a serious asphyxia. In the cases in which death occurred in Dr. King's series solution of pituitary was given and might have been responsible as well as quinine. I agree with Dr. King that in the induction of labor smaller doses of quinine are to be used instead of the 10 grain doses advocated by Watson.

DR EDWARD L. KING, New Orleans. Dr. Falls mentioned the late death of these children as an argument against quinine as the cause. It was brought out by Dilling and Gemmell that the quinine remained in the fetal tissues long after the crest of the quinine wave had passed in the maternal blood stream. It seemed to be retained longer by the fetal tissues once it got there. Another point to be remembered is that the death may be reported to the physician several hours after it has actually occurred. The woman notices that the fetal movements have stopped but she may not report the fact until she is absolutely certain of it. As Dr. Falls stated, the percentage of deaths in his quinine series was higher because of complications. That of course did not concern the three babies that I reported, because there were no complications, no toxemia and no instru-

mentation. I do not think that the fact that these patients had received solution of pituitary can be brought into consideration. In one instance the solution of pituitary was given only a few minutes before the baby was born and there was no evidence at autopsy of any intracranial or other injury. In the second instance there were no labor pains whatever following the administration of the Watson method, including the solution of pituitary, and in the third case again the labor pains were normal and not overstrong, and there was not at autopsy anything to show any intracranial or other damage to the fetus. I think that it is rather clear that the death of these babies can be charged to the quinine, at least the matter deserves consideration and should make one consider very seriously the question of using quinine at all, or at least the advisability of reducing the dosage in the induction of labor.

TULAREMIC PNEUMONIA

REPORT OF A CASE

JAMES R. GUDGER, M.D.

DETROIT

In recent years, tularemia has taken a place of major importance among the acute infectious diseases. The extremely infectious nature of the organism *Bacterium tularensis*, and the various types of the disease in man, are of prime importance to the clinician. An increasing dissemination among the lower animals has been the subject of much investigation. Study of the extensive literature reveals that in certain cases of the typhoid type the lesions are most prominent in the lungs. Pulmonary complications are often diagnosed with difficulty and are attended by a grave prognosis. Two cases of tularemic pneumonia have been reported, in one of which the patient recovered. It is my purpose in this paper to report an additional case of tularemic pneumonia that terminated fatally.

REPORT OF CASE

Severe generalized infection, greatest degree of involvement in the lungs without lymphatic enlargement, diagnosed by serum agglutination, course lasting thirty-one days.

History.—T. P., a white man, aged 32, admitted, Nov. 12, 1932, complained of chills, fever, profuse sweating and prostration. The onset had been sudden, ten days before, with a severe chill, aching and perspiration. The next two days he experienced some muscular pains in his back and legs, these subsided and he was practically free from symptoms for one day. The chills and sweats continued with frequent attacks of coughing, producing a small amount of thick blood streaked sputum on the day before admission. There was no nausea or vomiting. A communication from a relative received six days after his admission reported a cut on her finger from a bone while cleaning rabbits. She was taken with chills, fever, sweating and axillary adenitis on the same day the patient became ill. The cut soon became an ulceration which healed with difficulty three or four weeks later. The patient admitted having cut his left thumb on a piece of bone while cleaning rabbits with his relative on October 27. The cut healed promptly and he continued to hunt and dress rabbits near Jackson Mich. There was no history of exposure to typhoid or alcaligenes infection. He had pneumonia in childhood, pneumonia and pleurisy in 1909, and influenza, pneumonia and pleurisy in 1918.

Examination.—The patient was alert and cooperative, the most important observations being fever of 103.4 F., pulse rate of 84 and respirations 24. The face was flushed, the mucous membranes of the nasopharynx were injected and the tongue was heavily coated. There were a few shotty glands in the left cervical area but no other lymphadenopathy. The chest

From the Department of Medicine, Henry Ford Hospital.

was normal to percussion, no rales were heard. The heart sounds were normal, the rate was regular, and there were no murmurs. The blood pressure was 105 systolic, 60 diastolic. Abdominal examination revealed slight tenderness along the right costal margin, the liver and spleen were not palpable, and there was no distention. Knee-kick reflexes could not be obtained. The blood count on admission was entirely normal. The urine contained a trace of albumin and sugar. The results were negative in other laboratory studies, including a blood Wassermann test, blood culture, Mantoux test, intradermal test with 0.1 cc of brucellin, serum agglutination for *Alcaligenes abortus*, and smears of the sputum for acid fast organisms. The Widal test was positive for *Salmonella schottmulleri* (*Bacillus paratyphosus* B) in a titer of 1:40. Roentgenograms of the chest revealed a rounded shadow of increased density extending outward from the region of the left hilus.

On the day of admission the patient had a severe chill accompanied by profuse perspiration. His toxic state gradually became more severe and two days later signs of the pneumonic process were well developed. There was impairment in the left interscapular space, with many crepitant rales. The leukocyte count at this time was normal but the polymorphonuclear count was 80 per cent. The temperature varied between 103 and 104 F, with a pulse rate of 84 to 96 per minute. Agglutination of the patient's serum with *Bacterium tularensis* in a titer of 1:320, on the sixteenth day of his illness, established the diagnosis. Four hundred cubic centimeters of convalescent blood with an agglutination titer of 1:1,280 was given, without improvement. Several small red maculopapular spots, characteristic of the skin manifestations, were seen over the chest and abdomen. There was no lymphadenopathy, however, at any time. The slow pulse rate became more rapid as prostration increased, and the slowly spreading process involved the right side of the chest. The patient was irrational and incontinent of urine and feces. He continued to cough up small quantities of very thick greenish-gray sputum. Signs of consolidation were evident over the left lower lobe, but on the right there was only moderate impairment in the presence of many coarse rales. On the twentieth day 12 cc of antiserum¹ was given intravenously. This was repeated on the twenty-fourth day, with only slight or temporary improvement after each dose. Toward the end of the third week there was a rapid rise in the agglutination titer for *Bacterium tularensis*, finally increasing to 1:5,600. Though definite signs of meningitis were not evident, the lethargic state and occasional muscular twitching suggested involvement of the central nervous system. Spinal puncture yielded normal cerebrospinal fluid which did not agglutinate *Bacterium tularensis* and the culture of which was negative. One hundred cubic centimeters of bloody fluid was aspirated from the left pleural space. *Bacterium tularensis* was obtained in pure culture from this fluid. Late in the course the leukocyte count was 4,800, with 77 per cent polymorphonuclears, 3 per cent small lymphocytes, 15 per cent large lymphocytes, 3 per cent monocytes and 2 per cent eosinophils. The rise in serum agglutination for *Bacterium tularensis* was accompanied by a positive Widal reaction, the maximum agglutination titer reaching 1:640. The phagocytic indexes for *Bacterium tularensis* and *Alcaligenes abortus* showed a steady increase until they reached 100 per cent during the last few days before the patient died. Convalescent serum was given intramuscularly without improvement. Because of respiratory embarrassment and cyanosis an oxygen tent was used without apparent effect on the rapidly fatal course. The patient died December 2.



Appearance of chest on tenth day of illness showing pneumonic process on left

Necropsy—Nothing unusual was noted in the external examination of the body. The left pleural cavity contained 800 cc of bloody turbid fluid. The surface of the visceral pleurae was covered by a thick, fibrinopurulent exudate, most abundant over the lower lobe. This lobe was completely consolidated and a small area of consolidation was seen near the apex in the upper lobe. When sectioned, the tissues of the lower lobe appeared grayish red, with many small areas of a peculiar grayish blue scattered diffusely throughout. These were granular, necrotic, and unrelated to the bronchi. On the right side there were a few adhesions but there was no fluid. The middle and lower lobes were greatly congested. Scattered throughout the upper lobe were small areas of consolidation, which, when sectioned, had a translucent dark red appearance. These were similar to the area in the right upper lobe. The large bronchi on both sides were filled with tenacious mucopurulent material. The peribronchial and retroperitoneal lymph nodes were enlarged but not grossly caseous. The liver and spleen were congested, but no areas of infiltration or necrosis were seen. The other organs, including the brain and meninges, were normal except for some congestion.

Sections from the consolidation in the lungs showed various degrees of a severe acute inflammatory process. In the lighter pink areas the bronchi contained considerable exudate. The blood vessels were dilated and engorged. Many of the alveoli were filled with disintegrating polymorphonuclear leukocytes and necrotic material. In the darker areas there were foci of more advanced necrosis in which the alveolar walls could not be made out or appeared to fuse with the necrotic content. In other areas the lining cells of the alveoli appeared swollen and unusually distinct. In a few places, giant cells were seen around the foci of necrosis. The peribronchial lymph nodes showed irregular areas of necrosis without adjacent infiltration. Many large pigment cells were seen in these and also in the mesenteric and retroperitoneal glands. Tissue sections from various organs of the body stained for *Bacterium tularensis* failed to demonstrate the organism. Two rabbits inoculated with a saline suspension of splenic tissue died on the third day with the characteristic lesions. Positive cultures for *Bacterium tularensis* were obtained from the spleen and from the blood of the heart.

COMMENT

Fourteen fatal cases of tularemia with postmortem observations have been reported. In one of these cases the chest was not prosected. Of the others 92.3 per cent (twelve out of thirteen) showed intrathoracic lesions of tularemia, 61.5 per cent (eight out of thirteen) showed definite inflammatory processes of pneumonia. Permar and Macchlian,² in a study of seven cases in which the chest was prosected state that 87.5 per cent showed tularemia lesions of some kind in the lungs, 62.5 per cent showed a diffuse pneumonia, and thirty-six per cent of fatal cases showed pneumonia clinically or at postmortem. In a case reported with the postmortem observations they noted the absence of lymphadenopathy.

Other cases showing more or less extensive lung involvement reported with the necropsy include the case by Verbrücke³ in 1924. Irundice was noted as a

¹ 2 Permar, H. H. and Macchlian, W. W. G. *Tularemia Intra-morta*. *Ann. Int. Med.* 5: 657-658 (Dec.) 1931.
² Verbrücke, J. R. Jr. *Tularemia with Report of Fatal Case Simulating Cholera*. *with Post-mortem Report*. *J. A. M. A.* 82: 177-181 (Mar. 1) 1924.

³ The supply of antiserum was furnished by Dr. Lee Fosha.

rare complication in this case. Francis and Callender,⁴ and Bunker and Smith⁵ mentioned pathologic features of special interest in their cases. Palmer and Hansmann⁶ called attention to the absence of any clinical symptoms of a complicating bronchopneumonia in a case reported by them. In the review of a rapidly fatal case, Simpson⁷ suggested that in many cases tularemia areas in the lungs are erroneously reported as bronchopneumonia. Massee⁸ described a case of tularemia of the typhoid type in which the red hepatization at the bases appeared as a "bronchopneumonia of the confluent type."

In a discussion of the pulmonary lesions, Blackford⁹ in May, 1932, stated that "at this time the criteria for making the diagnosis of tularemia of the lung from pathologic studies alone seem indefinite; further work along this line is necessary." He reported a case of acute tularemia with extensive intrathoracic lesions, calling attention to the frequency with which the disease attacks the lung. Among the conditions found in both tularemia and tuberculosis of the lung, the author mentioned pleural effusion, bronchopneumonia, cavitation and abscess formation. Others¹⁰ have also published necropsy results with descriptions of the characteristic lesions. The areas of focal necrosis have a marked resemblance to caseous tubercles.

In 1931, Reimann and Rose¹¹ pointed out the similarity between the granulomatous infection, classed as pseudotuberculosis in Europe, and the typhoid type of tularemia. Some authors describe the mononuclear reaction as characteristic of early tularemic lesions, and the appearance of polymorphonuclear leukocytes as a secondary reaction. In one case Simpson mentions the absence of any evidence of endothelial proliferation or thrombosis of the small blood vessels, in the lymph node and splenic lesions, as have been reported by others. There is considerable variation in the leukocyte count reported with cases of severe or widespread infection. The majority show a moderate degree of leukocytosis with an increase in the polymorphonuclear cells, but a normal count, or even leukopenia, may exist. Serum agglutination is present the second week and rapidly increases during the third.

Various authors estimate the mortality in all cases of tularemia to be about 4 per cent. However, Simpson

states that in his local ty, Dayton, Ohio, tularemia is believed to cause death in approximately 11 per cent of cases. Tureen¹² has reported a case of tularemic pneumonia with recovery. This is remarkable in that the overwhelming toxemia associated with pulmonary lesions, especially a pneumonic process, is often fatal. An ulceration at the site of infection with an associated lymphadenopathy of the regional nodes, is characteristic of the average case of tularemia. Dissemination of infection is thought to be chiefly through the lymphatics. Goodpasture and House mentioned the possible encroachment on blood vessels by the necrotizing foci and subsequent blood stream infection. Laboratory workers have become infected through the unbroken skin and it is not surprising that of three fatal cases, in which lesions within the chest were most marked, none presented definite cutaneous ulcerations. In two of these, absence of gland enlargement was noted. These observations point out the necessity for further investigation of the pathologic processes in tularemia.

SUMMARY

1 In a fatal case diagnosed as tularemia, the clinical observations and necropsy gave evidence of extensive pneumonia believed to be tularemic.

2 The exact route by which the infection reached the lungs, whether through the blood stream, lymphatic channels, or the respiratory passages, is unknown.

3 In the terminal stage the infection was generalized, and there was clinical evidence of extreme toxicity.

4 Lesions characteristic of those produced by tularemia were present in the lungs and peribronchial lymph nodes.

Clinical Notes, Suggestions and New Instruments

BILATERAL ABDUCTOR PARALYSIS IN A TWO DAYS OLD INFANT, WITH TRACHEOTOMY AND RECOVERY

SAMUEL J. PEARLMAN, M.D. AND NORMAN LESHIN, M.D.
CHICAGO

A case of bilateral abductor paralysis in a 2 days old infant requiring tracheotomy and ending in recovery is being reported to place on record one of the youngest infants recovering after a tracheotomy. It is also one of the very few cases reported in the literature of bilateral abductor paralysis in an infant, so diagnosed by direct laryngoscopic examination.

Adams¹ reported the case of a 10 months old infant with attacks of crowing inspiration and dyspnea since birth. Laryngoscopic examination showed the vocal cords immobile in the adductor position not inflamed, with an infolded epiglottis. The softer structures of the larynx including the false cords tended to roll in over the cords during inspiration. Tracheotomy was done with relief of the symptoms, but the patient succumbed to a sepsis ten days later. Tucker² reported a case of a 2½ months old infant with urgent dyspnea. Direct laryngoscopic examination showed a bilateral posticus paralysis with an anteroposterior tracheal compression. Roentgen examination revealed a widening of the mediastinal shadow with evidence of anteroposterior tracheal compression. Tracheotomy and roentgen therapy for the thymus gave complete relief and

12 Tureen L. L. Tularemic Pneumonia J. A. M. A. 99 1501 1502 (Oct. 29) 1932.

1 Adams James. Bilateral Abductor Palsy Due to Fibrosis of the Thymus J. Laryng. & Otol. 46 694 (Oct.) 1931.

2 Tucker Gabriel. Obstructive Dyspnea. Bronchoscopic Observations Types with Illustrative Cases. South M. J. 25 723 (July) 1932.

4 Francis Edward and Callender G. R. Tularemia. Microscopic Changes of Lesions in Man. Arch. Path. & Lab. Med. 3 577 607 (April) 1927.

5 Bunker C. W. O. and Smith E. E. Tularemia. Report of Four Cases. One Fatal with Autopsy Report. U. S. Nav. M. Bull. 26 901 911 (Oct.) 1928.

6 Palmer H. D. and Hansmann G. H. Tularemia. Report of Fulminating Case with Necropsy. J. A. M. A. 91 236 239 (July 28) 1928.

7 Simpson W. M. Tularemia. Study of Rapidly Fatal Case (Four Days Seven Hours). Arch. Path. 6 553 574 (Oct.) 1928.

8 Massee J. C. Tularemia in Georgia. Report of Fatal Case. J. M. A. Georgia 20 66 67 (Feb.) 1931.

9 Blackford S. D. Pulmonary Lesions in Human Tularemia. Pathologic Review and Report of Fatal Case. Ann. Int. Med. 5 1421 1426 (May) 1932.

10 These articles are as follows:

Goodpasture E. W. and House S. J. Pathologic Anatomy of Tularemia in Man. Am. J. Path. 4 213 226 (May) 1928.

Permar H. H. and Weil G. C. Histopathology of Subcutaneous Lesions in Tularemia in Man. Am. J. Path. 2 263 273 (May) 1926.

Bardon Richard and Berdez George. Tularemia. Report of Fatal Case with Postmortem Observations. J. A. M. A. 90 1369 1371 (April 28) 1928.

Foulger, Margaret, Glazer A. M. and Foshay Lee. Tularemia. Report of Case with Postmortem Observations and Note on Staining of Bacterium Tularensis in Tissue Section. J. A. M. A. 95 951 954 (March 19) 1932.

Bryant A. R. and Hirsch E. F. Tularemic Leptomenigitis. Report of Case. Arch. Path. 12 917 923 (Dec.) 1931.

Hartman F. W. Tularemic Encephalitis. Pathology of Acute Tularemia with Brain Involvement and Coexisting Tuberculosis. Am. J. Path. 8 57 62 (Jan.) 1932.

11 Reimann H. A. and Rose W. J. Similarity of Pseudotuberculosis and Tularemia. Arch. Path. 11 584 588 (April) 1931.

subsequent recovery. Jackson³ states that he has seen three cases of laryngeal stenosis due to perichondritis in infants a few weeks old. The laryngeal stenosis was revealed by laryngoscopic examination, and the symptoms were immediately relieved after tracheotomy with subsequent recovery and cure. These cases were all forceps deliveries and traumatism may have been the etiologic factor. The stenotic symptoms began between the second and fourth weeks. Jackson⁴ reported one case in detail in which obstructive symptoms began three weeks after delivery in an infant 8 weeks old. The child was moribund from loss of sleep and starvation. The left side of the subglottic region bulged inward until there was only a slight crevice through which to breathe. The swelling was firmer than edema and contained pus. A tracheotomy was done and considerable mucopus escaped from the trachea as soon as the tracheal incision was made. There was immediate complete relief of the dyspnea following the tracheotomy with subsequent recovery. These cases of laryngeal stenosis in the new-born are not common compared to the number of births, according to Jackson, but are usually overlooked when they do occur.

REPORT OF CASE

M. M., a baby girl, aged 2 days, was admitted to the pediatric service of the Michael Reese Hospital with a history of dyspnea and some cyanosis since birth. Delivery was normal; no instruments were required; the baby had good color and weighed 10 pounds (4,536 Gm). The child had been restless and crying most of the time since birth. On the second day she became blue with frequent attacks of marked dyspnea every ten minutes, lasting about five minutes. The family history was negative, five other children were living and well.

On admission the baby was well developed, the temperature was 96.4 F, the pulse, 186, and the respiration rate, 56. There was difficulty in breathing with marked inspiratory stridor, retraction of the costal margins and cyanosis of the lips, face and hands. The baby was lying quiet and listless. There was an apparent fulness of the neck with a palpable, soft cystic mass definitely circumscribed over the trachea, extending down to the clavicle on the right side. There was also bulging and dullness over the entire sternum. There were no palpable masses in the pharynx. Roentgen examination of the chest after admission revealed a tremendously enlarged heart with a very broad mediastinum. A congenital heart condition plus a persistent thymus was considered. Because of the marked dyspnea, a low tracheotomy was done under local anesthesia by one of us (S. J. P.). The thyroid gland was found to be much larger than usual, engorged and soft. The condition of the infant was immediately greatly improved.

Three days after admission, examination by Abraham Levinson, attending staff pediatrician, revealed a suggestive slight cyanosis, with the heart dullness greatly increased in area. There was mediastinal dullness at the level of the second intercostal space with a bulging of the whole chest, possibly more marked over the precordial area. The heart tones were audible over the entire precordium, loud and rapid, but with no murmurs. The lungs were normal. Roentgen examination of the chest five days after admission showed almost complete clouding of the left lung field produced by a large cardiac shadow. There was also a broad superior mediastinum. A pathologic heart as well as a persistent thymus was considered, with the possibility of an atelectasis of the upper lobe of the left lung.

On the ninth day after admission, the condition of the infant now permitting a direct laryngoscopic examination was done and a bilateral abductor paralysis of the vocal cords was found. The cords were in the midline pale with no evidence of any inflammation. There was no swelling or any edema about the larynx. A week later roentgenograms of the chest were negative for congenital heart disease. During the period following the tracheotomy the general condition of the infant remained good except for an occasional attack of cyanosis and dyspnea, which was relieved immediately by cleansing of the tracheotomy tube. Examination by Dr. Levinson now showed the heart border very much smaller. In view of the fact that the heart had become much smaller it became clear that the original pathologic condition had been in the larynx and that the enlargement of the heart was due to a secondary dilatation

which had subsided following relief of the dyspnea by tracheotomy. A month after admission the heart outline was normal. The subsequent course was uneventful except for occasional attacks of slight dyspnea fever and suspicious lung changes. These were relieved with the removal and cleansing of the tracheotomy tube. Nine weeks after admission, the tracheotomy tube was removed permanently. Another roentgenogram taken at this time revealed a persistent thymus and normal heart borders. The direct laryngoscopic examination now showed the vocal cords to be normal and moving freely. The patient was discharged a few days later, a little over ten weeks after admission, the tracheotomy wound was completely closed and the heart tones were normal. The patient now weighed 10 pounds 3 ounces (4,648 Gm). Examination in the outpatient department two months later showed her to be in good condition breathing normally and weighing 13 pounds 4 ounces (6,045 Gm).

SUMMARY

1. A 2 days old infant with a bilateral abductor paralysis of the vocal cords required tracheotomy, there was subsequent recovery.

2. Jackson's statement that there is no contraindication to tracheotomy if the indications are well established holds true in this particular instance. The age of the patient might tempt the cautious physician to fear surgical intervention. Caution however, in this instance meant an almost certain death from asphyxia.

3. The attacks of fever and lung changes were in all probability due to dried secretions in the bronchial tract. The necessary postoperative care of the tracheotomy tube, frequent use of suction with removal of crusts, and good nursing attention, combined to aid in the recovery.

180 North Michigan Avenue.

Special Article

REPORT OF COMMITTEE ON LYE
LEGISLATION

Your committee begs to report that eleven judgments have been entered against different firms and corporations for the misbranding of caustic preparations as provided in the Federal Caustic Poison Act. All of these preparations contain caustic or corrosive substances in packages suitable for household use, and all were found under conditions involving interstate transportation.

1. *Go-Drain*, sodium hydroxide, word "Poison" in type smaller than size required, no complete directions for treatment in case of accidental injury. Consigned by Goulard and Olena, Inc., New York. Transported from New Jersey into Pennsylvania.

2. *"Drain Aid"* George H. Garnet Co., Waltham Supply Co. Not labeled "Poison" and no directions for treatment. Shipped from Pennsylvania into Massachusetts and New York.

3. *Go-Infecto No. 1*, Goulard and Olena, Inc. No word "Poison" no common name of article and no directions for treatment on label. Shipped from New Jersey into Connecticut.

4. *Cold Water Drain Pipe Solvent*, Hercules Chemical Co. New York. Shipped from New York into Colorado. No label giving common name, no word "Poison" and no directions for treatment.

5. *H T H*, Matthews Alkali Works, Inc. Shipped from New York into Maryland. Not labeled "Poison" and no directions for treatment.

6. *Druso Caustic Pencils* Go ham Aseptic Laboratories New York. Shipped from New York to Philadelphia. The antitoxin and the printing of the word "Poison" were not in conformity with the provisions of the act. Label implied that the product was manufactured by the Philadelphia Wholesale Drug Co. whereas that concern was not the actual manufacturer.

³ Jackson, Chevalier. *Personal Endoscopy and Laryngeal Surgery*. Laryngoscope Company, 1915, pp. 552 to 554.

⁴ Read before the Section on Laryngology, Otolaryngology and Rhinology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 12, 1933.

7 "Hydro Clean", William Harris Plunkett (Plunkett Chemical Co) The word "Poison," the common name of the article and directions for treatment were omitted from the label Shipped from Illinois to Ohio

8 Carbolic acid misbranded, McKesson-Lingley-Michaels Co, Ltd The word "Poison" and the directions for treatment did not comply with the requirements of the Federal Caustic Poison Act Shipped from California to Texas

9 Ma Burns' Liniment" containing free ammonia in proportion greater than 5 per cent Word "Poison," directions for treatment and common name for the caustic substance omitted from the label Eight dozen bottles of "Ma Burns' Liniment" were shipped by the Ma Burns Liniment Co, Boston, to New Jersey

10 Biz", Henderson and Skipworth, containing carbolic acid in excess of 5 per cent Common name the word "Poison" and directions for treatment in case of accidental injury omitted from the label Shipped from California to state of Washington

11 Miller's Anti Mole' containing nitric acid in proportion of 68.08 per cent The common name, the word "Poison" and the directions for treatment were not printed on the label Shipped by Miller Manufacturing Co from Nebraska to Missouri

Each of the caustics found was of potential danger to children and others were dangerous because there was no proper warning on the label

Your committee has great satisfaction in reporting the foregoing judgments. We took no part whatever in the actions against these violators of the law. All credit is due to the energetic fulfillment of duty on the part of the Food and Drug Administration of the United States Department of Agriculture. Our satisfaction arises because of the full vindication of the action of the Section on Laryngology in the appointment of this committee and of the committee's work since the appointment. It was alleged in many quarters that there was no necessity for legislation as it was imagined by some persons that the manufacturers of caustics would voluntarily comply with the dictates of humanity in labeling caustic substances so as properly to protect the public. It is clear from the foregoing list of violations that there are packers who do not realize the necessity for proper labeling.

Your committee wishes to point out that the foregoing convictions concern the violations in interstate traffic. There are many misbrandings in interstate commerce. It is our duty to obtain adequate legislation in the twenty-four states that are still without such a law and we ask to be continued until this shall have been accomplished.

Your committee requests that its chairman be authorized to send a letter to the Food and Drug Administration of the United States Department of Agriculture expressing the appreciation of this section of the American Medical Association for the efficient way in which action has been taken against violators of the Federal Caustic Poison Act, our interest being only to protect children, so far as possible, from the swallowing of caustic substances.

Respectfully submitted CHEVALIER JACKSON, Chairman

A Real Knowledge of Disease—However greatly medicine was indebted to Virchow and the other noted morphologists for their systematizing of disease and establishing clear understandings of the anatomical basis of many conditions it must be recognized that time has brought about great advances in entirely new directions. The contributions of chemistry and physiology in particular have established viewpoints of the dynamics of many diseases that render the older static or morphological conceptions largely lifeless. The complicated and widely distributed manifestations and effects of certain general diseases and infections push into the background of relative unimportance the limited pathological lesions that may perhaps with justification be regarded as representing the primary foci or seats of onset. A real knowledge of disease requires an understanding of the complexities of the mechanisms of adjustment that follow an initial fault and not infrequently the struggle for compensations occasions new clinical pictures that show little evidence of relation to the primary lesion which thus becomes dwarfed by contrast—Stengel, Alfred. *The Internist as His Own Psychiatrist* *Ann Int Med* 7 281 (Sept) 1933

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
H A CARTER, Secretary

ANITA NOSE APPLIANCES NOT ACCEPTABLE

The Anita Company, formerly the Anita Institute now located at 617 Central Avenue, East Orange, N J, submitted to the Council three appliances for consideration one termed the Modified Splint, the second the Clinical Dressing and Dilator and the third the Anita Nose Adjuster (Anita Nose Brace). All these devices are similar in make up and appearance. They are constructed of porous fabric, one or more inner layers of which are stiffened by processing. The body is designed to cover the external nose and is provided with openings at the apertures of the nares for breathing. Bound and covered wires form the periphery making it semirigid although flexible. Tapes are attached to hold the device on the wearer's head. At an earlier date, an appliance known as the Anita Nose Adjuster (Anita Nose Brace) was submitted but after investigation by the Council it was declared unacceptable. In accordance with the regular procedure of the Council the report was presented to the firm for thirty days' consideration. The manufacturer requested that the publication of the former report be withheld until such time as new evidence should have been forwarded and considered. This request was granted.

The Anita Company now makes the following physical and therapeutic claims for the appliances:

- 1 The appliance is useful as an external splint for immobilizing the bones and cartilages of the nose after fracture reduction.
- 2 It is useful for the retention of dressings applied to external wounds resulting from accidental injuries and surgical operations involving the external portions of the nose.
- 3 It is useful as a supporter to relieve the strain on sutures such as is employed following resection of the columella etc.
- 4 In plastic surgery the appliances may be used:
 - A For the immobilization of transplants (and grafts) pending natural anchorage.
 - B As a constrictor for inhibiting excessive nasal post operative oedema.
 - C For the application of lateral pressure on the nasal processes of the superior maxillae (and nasal bones) following thinning operations such as that incident to the surgical removal of prominences in hump nose therapy.
- 5 The appliance is useful in non-surgical correction of certain mild deformities of the external soft tissues of the nose in cases where no pathology or bony abnormalities are present such as:
 - A In bulbous noses true atrophy (I) of alar fibro fatty tissues may be induced by the application of gentle pressure (II) over an extended period of time.
 - B In noses with drooping tips due to muscular elongation support is given to the nose tip permitting contraction and strengthening of the Nasalis and Dilatores Naris Anterior and Posterior. The strengthening of Dilator muscles often results in facilitated breathing through the improvement or restoration of their function of resisting atmospheric pressure and keeping the nares open during inhalation (III).
 - C In certain cases of external deviations the appliance may be used for the application of corrective lateral pressure or traction similar to the methods of Josephs, Kenzendorf and Loebell (IV).
 - D In mild cases of retrousse (turned up) noses correction may be accomplished through the simple application of downward traction and pressure (V).
 - E In certain types of flat and low bridged noses improvement may be obtained by slightly squeezing the nares and integument so as to build out the nose anteriorly.

The appliances were investigated by the Council and the correspondence submitted for evidence as to the therapeutic efficacy was given careful consideration. The physical and therapeutic claims for the usefulness of these appliances as an external splint for immobilizing the bones and cartilages of the nose after fracture reduction are not disputed. There is a possibility of the use of such a device, but it is highly probable that most surgeons will rely on complete or as complete as possible reduction and will not use external dressing, rarely will intranasal dressing be used in such cases.

That the appliances are useful for the retention of dressings applied to external wounds is questioned. External wounds properly sutured are quite universally left undressed by the

surgeon, as they heal more quickly and do not make a soppy dressing over the face, which is disagreeable to the patient. Such a dressing could not relieve the strain of sutures with any degree of success.

In plastic surgery the dressing in question might be used for immobilization of full thickness grafts applied on the skin, but usually the surgeon prefers to mold his own from dental wax or use a piece of highly compressible rubber sponge. Flap grafts turned down from the scalp need no retention dressing of any kind, as they are held by sutures.

The Council did not observe that the appliance could in any way inhibit postoperative nasal edema without acting untowardly.

After operations for thinning the nose, no pressure would be indicated or needed laterally on the nasal process.

The Council declares that the appliances cannot be used successfully to correct deformities such as bulbous nose. There is no method except excision for the correction of such cases that gives happy results. The same is said of drooping tip noses and external deviation. Such an appliance could in no way increase the volume or ease of nasal breathing and respiration during inhalation. Practically all natural and acquired deformities must be treated by surgical means and any loosely applied apparatus attempting to make corrections by pressure, no matter how long applied, would fail to affect the underlying cartilage or bone, and the soft parts cannot be thinned or pressed out without danger of necrosis with subsequent ulceration.

The Council finds that most of the quotations recorded in the references submitted as clinical evidence are not pertinent to the matter under discussion, particularly those referable to pressure, atrophy and distortion. Most of the references to medical literature are taken from textbooks several years out of date.

One cannot draw analogy from the effects of pressure on joints or the spine as compared to the effects of pressure on the nose. The statements quoted in the references are not complete, which materially changes the meaning of the statements. Any changes, such as those involved in misshapen skulls or distorted feet of Chinese women or pressure as from intracranial tumors existing unremittingly over a long period, are constant in character and in most instances are applied to very young children during their growing or formative period, when bones are quite soft and the interstices between the segments have not yet filled in.

The suggestion that the intervertebral cartilages become triangular is a gross misrepresentation, as this does not occur from trauma or pressure except in the face of disease such as tuberculosis. The nucleus pulposus is incompressible and so elastic that the bone of the body of the vertebra will crush and change its shape long before the cartilage is in any way affected. Likewise the quotations covering the treatment in scoliosis saying that gymnastics and posture are insufficient—stretching and retaining apparatus are necessary—concern a question on which experts have not agreed. In the opinion of the Council, the Anita Nose Appliance cannot possibly be effective in molding or gradually reshaping soft parts of the nose thereby changing the general appearance. It would be impossible for any one to wear this appliance over a long period at a fixed degree of tension. The patient would have to take the device off at night or in the daytime to wash his face or for other purposes and any intermittent change in the pressure would invalidate the proposed claim by the manufacturer. Continued pressure would lead to irritation of the skin and to necrosis and ultimate ulceration.

As a means of holding on a dressing or protecting noses after reduction of fracture and displacement of the bones or cartilage or possibly in many cases for retention of the full thickness flaps against a raw area such a device might be useful. There are other devices that a physician can make himself at the time of his operation which are cheaper and have the qualities incidental to all custom made materials such as would be required in the fitting of nose, no two of which are exactly alike.

The Council on Physical Therapy declares the Anita Nose Appliances unacceptable for inclusion in the list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS JEECH Secretary

LIQUID PETROLATUM (See New and Nonofficial Remedies, 1933, p. 255)

The following dosage form has been accepted:

Petrolagar with Cascara (Non Bitter) Liquid petrolatum 60 cc emulsified with agar in a menstruum containing non bitter fluid extract of cascara sagrada 13.2 cc sugar flavoring sodium benzoate 0.1 Gm and water to make 100 cc.

Prepared by the Petrolagar Laboratories Inc. Chicago. No U. S. patent. U. S. trademark 165 616.

RADIUM CHLORIDE (See New and Nonofficial Remedies, 1933, p. 342)

Radium Chloride-Radium Belge—Supplied in the form of a mixture of radium chloride and barium chloride containing 90 per cent or more of the radium salt. Sold on the basis of the U. S. Bureau of Standards measurement with the radium purity (concentration) guaranteed by the Radium Chemical Co., Inc.; it is also guaranteed that the gamma ray activity due to the presence of mesothorium, radiothorium or substances other than radium and its derivatives does not exceed 0.2 per cent.

Manufactured by Radium Belge Union Minière du Haut Katanga Brussels Belgium (Radium Chemical Co. Inc., New York distributor).

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS JEECH Secretary

HORSFORD'S ACID PHOSPHATE NOT ACCEPTABLE FOR N. N. R.

Horsford's Acid Phosphate was presented for consideration of the Council by the Rumford Chemical Works, Rumford, R. I. In the information submitted by the firm the value of the product is said to depend on the phosphoric acid and the calcium, sodium and potassium ions contained. In the advertising submitted it is stated that the product consists of an aqueous solution of phosphates of calcium, magnesium, potassium, sodium and iron with phosphoric acid. Elsewhere in the advertising it is said to consist of a solution of the phosphates of lime, magnesium, potash and iron in phosphoric acid. Neither the advertising nor the presentation states the amount of any of the constituents in this preparation but it is stated that it was invented [sic] by Professor E. N. Horsford, then Rumford professor of chemistry, Harvard 1847 to 1863. The submitted label contains the following more definite statement of composition: "A fluid drachm contains 3¼ grains calcium acid phosphate, 1 grain magnesium acid phosphate, ¼ grain sodium acid phosphate, ½ grain potassium acid phosphate, ¼ grain iron acid phosphate and 3½ grains free phosphoric acid. Total phosphoric acid free and combined, 8½ grains."

The advertising is a mélange of science and pseudoscience. Horsford's Acid Phosphate is recommended in a great variety of conditions, including the following as a tonic as a builder-up, in the run down conditions following prolonged illness, failure of proper nourishment from food, loss of appetite, lassitude and weakened or impoverished nerve energy, as an aid in the treatment of the prostrated condition resulting from the excessive use of alcohol to allay the insomnia resulting from the use of tobacco and other causes, in many nervous diseases brought on by nerve tire [sic] and exhaustion.

In support of the greater number of claims the manufacturer cites numerous articles from 1869 to 1892 but only three of later date than 1921. The Council's referee examined one of the later articles cited, that of Poppelreuter (*München med. Wchnschr.* 76:912 [May 31] 1929). This article is based on Poppelreuter's work with heparin, a preparation of cod liver

biphosphate which the Council rejected (THE JOURNAL MAY 3 1930, p 1406) in part because the therapeutic claims advanced for it were unwarranted. The claims made for Horsford's Acid Phosphate in general are similar to those made for Recresal.

The Council declared Horsford's Acid Phosphate unacceptable for New and Nonofficial Remedies because it is an unscientific mixture of unproved usefulness marketed with unwarranted therapeutic claims and in such a way as to tend to its ill advised use by the public.

EDWENIL NOT ACCEPTABLE FOR N. N. R.

Edwenil is a product proposed for nonspecific immune therapy now marketed in the United States by Spicer and Company of Glendale, Calif. Judging from the many inquiries received from physicians it appears to have been the subject of an intensive advertising program begun by the originators of Edwenil, E. H. Spicer and Co. Ltd., of Watford Herts, England, and continued by the present American distributors.

Edwenil has been variously designated 'antibacterin,' 'a polyvalent antibacterial agent,' 'the biochemical successor to vaccines,' 'natural antibody,' 'a therapeutic active immunizing agent.' Its composition appears to be highly complex, as indicated by the following excerpts from the advertising:

Edwenil is the result of fifteen years work representing an effort to produce natural immunity or a polyvalent natural antibody. It is a calcic protein compound consisting of three elements as follows:

CALCIUM in the form of the bicarbonate which is apparently the form in which calcium is required for utilization by the immune body precursors.

A CALCIUM VEHICLE in the form of a nucleo protein.

AN UNATTACHED GLOBULIN ELEMENT obtained from serum.

EDWENIL is a complex organic colloid formed by a linkage of some of the alkali-denatured protein derivatives of normal serum and muscle in the presence of a normal saline containing calcium and magnesium salts.

As is usual with 'polyvalent' products of this sort this preparation is recommended as being of great value in a large variety of diseases among them, furunculosis, tonsillitis, quinsy, otorrhea, leukorrhea, eczema, acne, impetigo, sycosis, bronchitis, bronchiectasis, bronchial asthma, pneumonia, influenza, common cold, tuberculosis, rheumatoid arthritis, early osteo-arthritis, sciatica, rheumatic fever, measles, mumps, whooping cough, herpes, scarlet fever, chronic pyelitis and cystitis, cholecystitis, appendicitis, peritonitis, 'etc.' It is claimed to be quite devoid of toxic properties.

EDWENIL provides you with a non specific non toxic harmless and rapidly effective means of controlling endotoxic infections in general.

It is readily absorbed without local or general reaction thus obviating all disadvantages of vaccine or protein shock therapy.

EDWENIL is absolutely non toxic and harmless.

Anaphylactic phenomena are not encountered.

Numerous case reports are presented in the advertising "literature," giving sketchy details of alleged cures following the administration of Edwenil many even miraculous.

In an article appearing in the *Prescriber*, Edinburgh (24 253 [July] 1930), the origin of this type of antibacterial agent is attributed to S. G. Billington of Leamington who is said to have discovered the 'antibody complex' which apparently goes to make up Edwenil. An extensive bibliography is quoted both of experimental and of clinical work. Unfortunately all these articles have appeared in a single journal published in London, the *Medical World*, a periodical not available in this country even at the Surgeon General's Library. It is indeed cause for wonder that almost the only available data from medical sources about so remarkable a discovery should be so obscurely buried in the literature and that practically the only information available to the medical profession of this country about the product should come from the advertising circulars distributed by the commercial exploiters of Edwenil. In all the latter material (and it is fairly voluminous) there is nothing referable to the use of this product that bears critical examination.

Only a single paper on Edwenil was found in the American literature, that by J. Montgomery Anderson of London in the *Medical Journal and Record* (136 1 [July 6] 1932). On examination a large part of this article was found to be identical word for word with a section of an advertising booklet issued by the English firm E. H. Spicer and Company Ltd.

The remainder of this uncritical effusion is devoted to completely uncontrolled clinical evidence of the same sort as that presented in the advertising material.

While its composition is apparently quite different, the claims made for Edwenil are very similar to those made for Omnadine, another preparation proposed for nonspecific immune therapy which has already been the subject of an adverse Council report (J. A. M. A. 100 1173 [April 15] 1933). Objections there stated to Omnadine apply with equal force to Edwenil.

If the complete absence of allergic reactions claimed for Edwenil is true it would appear that this product contains little, if any, antigenic material. With those preparations of definite high antigenic potency (Bacillus typhosus vaccine, for instance) reactions are known to occur in a certain percentage if not in all individuals treated. If Edwenil is as safe as it is claimed to be, either it represents an epoch-making advance in medicine or it is practically useless as an immunizing agent.

There is no reliable evidence available to the Council that Edwenil involves any advance in nonspecific immune therapy. The Council believes that it must be classed as a dangerous preparation. If it contains antigenic material, claims of complete safety in its therapeutic use must be considered reprehensible, even if it has only a trace of antigen it may yet cause allergic reactions and if it is devoid of antigenic potency its use is unwarranted and may carry a hazard in the neglect of more effective remedies.

The Council declared Edwenil unacceptable for inclusion in New and Nonofficial Remedies because it is apparently an unscientific preparation of semisecret composition (rules 1 and 10) marketed under an uninformative name (rule 8) with unwarranted and possibly dangerous therapeutic claims (rule 6).

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
RAYMOND HERTWIG, Secretary

NOT ACCEPTABLE

VI-TO-MATO

CLEAR FILTERED TOMATO JUICE

Manufacturer—Tomato Products Company, Paoli, Ind.

Description—Pasteurized clear filtered tomato juice contains little vitamin A because of removal of tomato pulp; vitamin B is largely removed; vitamin C is equivalent to that of the unfiltered juice.

Manufacture—The tomato juice is prepared by essentially the same procedure as French Lick Tomato Juice (THE JOURNAL Aug. 13 1932 p 563) excepting that practically all of the tomato tissue is removed by a second screening. The thin juice in large containers is heated to 88 C; the containers are sealed; after a storage period the juice is removed from the containers admixed with 'calcined filter aid,' filtered at a low temperature (approximately 4 C) in a plate and frame press in the practical absence of air heated to 71 C, sealed in containers and processed at 93 C.

Analysis (submitted by manufacturer) —

	per cent
Moisture	96.7
Total solids	3.3
Ash	0.3
Fat	0.0
Protein (N x 6.25)	0.8
Crude fiber	0.0
Carbohydrates other than crude fiber (by difference)	2.2

Discussion of Name—The syllable Vi in connection with the name 'Vi-To-Mato' suggests 'vitamins' and thereby emphasizes the vitamin content of this filtered juice, which is inferior in vitamin content to the usual canned unfiltered tomato juice. The tomato juice largely retains the natural vitamin C but contains little of the natural vitamins A and B content. Although the filtered juice is inferior in vitamin content to unfiltered juice the contrary may be inferred from the name which is therefore misinformative and misleading.

The manufacturer was advised of the Committee's report but is not willing to change the brand name for business reasons. This product will therefore not be listed among the Committee's accepted foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

IRRADIATED VITAMIN D PASTEURIZED MILK
ADVERTISING OF PRODUCERS
CREAMERY*Distributor*—Producers Creamery, Benton Harbor, Mich*Description*—Advertising for bottled pasteurized vitamin D milk irradiated by Steenbock Process (patent No 1,680,818)*Preparation*—The milk complies with the analytic and bacteriologic requirements specified by the laws of the state of Michigan and the cities of Benton Harbor and St Joseph or other municipalities in which it is distributed

The milk is irradiated by a "CP Carbon Arc Lamp Milk Irradiator" equipped with a recording ammeter for recording lamp energy input and output of the irradiator milk pump and provides a complete chart of operation for inspection by plant and health officials. The irradiated milk is pasteurized by the standard procedure (holding method thirty minutes, at 61 C), immediately cooled automatically bottled and capped. The bottled milk complies with the requirements of the state of Michigan and health departments having jurisdiction over its production, processing, bottling and distribution. The method of irradiation and the equipment are under scientific control.

The bottles are washed for eight minutes in an alkaline solution, rinsed, cooled and washed with chlorine water.

Analysis (submitted by manufacturer) —

	per cent
Moisture	86.8
Total solids	13.2
Ash	0.7
Fat	4.3
Protein (N \times 6.38)	3.4
Lactose (by difference)	4.8

Calories—0.8 per gram 22 per ounce

Vitamins—Clinical investigation shows this irradiated milk to be a reliable antirachitic agent protecting all infants excepting those prematurely born, contains 50 Steenbock vitamin D units per quart.

Claims of Manufacturer—An irradiated antirachitic pasteurized milk having the natural flavor and food values of standard pasteurized milk.

CAKE-MAKER FLOUR (BLEACHED)

Manufacturer—Federal Mill Inc, Lockport N Y*Description*—A "short patent" soft winter wheat flour, bleached

Manufacture—Selected soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932 page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one twenty eighth ounce per 196 pounds) and with nitrogen peroxide.

Claims of Manufacturer—Specially prepared for cake, biscuit and pastry baking.

STOKELY'S FINEST MEDIUM GREEN
LIMA BEANSSTOKELY'S FINEST TINY GREEN
LIMA BEANS*Manufacturer*—Stokely Brothers and Company Inc, Louisville, Ky*Description*—Cooked graded fresh lima beans respectively medium and small sizes.

Manufacture—Fresh lima beans harvested at their height of development, are thrashed from the pod graded according to maturity, washed, cleaned of foreign material graded by machine into the three sizes: tiny, small, medium and large medium, and inspected on white rubber belts for removal of

undesirable material and the separation of white and green beans. From this step on, each type of bean is separately handled.

The beans are blanched in hot water sprayed with fresh water automatically filled into cans, and covered with brine, the cans are sealed, processed for a definite period at 115 C, immediately cooled, and labeled.

Analysis (submitted by manufacturer) —

	per cent
Moisture	80.7
Ash	1.4
Sodium chloride (NaCl)	1.0
Fat (ether extract) —	0.3
Protein (N \times 6.25) —	4.9
Crude fiber	1.2
Carbohydrates other than crude fiber (by difference)	11.5

Calories—0.7 per gram 20 per ounce

Claims of Manufacturer—Packed in enamel lined cans within a few hours after picking. Natural mineral and vitamin values are retained in high degree.

THE NEW PAN DANDY LOAF (SLICED)
BIG DANDY (SLICED)*Manufacturer*—The L D Feuchtenberger Bakeries, Bluefield, W Va

Description—White bread made by the sponge dough method (method described in THE JOURNAL March 5 1932 p 817) prepared from patent flour, water, sweetened condensed skimmed milk, sucrose, lard, salt, malt syrup, yeast and a yeast food containing calcium sulphate ammonium chloride, sodium chloride and potassium bromate.

DAILY BREAD FLOUR (BLEACHED)

Manufacturer—Federal Mill, Inc, Lockport, N Y*Description*—A "standard patent" Northwestern spring wheat and hard winter wheat flour, bleached

Manufacture—Selected wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with nitrogen peroxide.

Claims of Manufacturer—Intended for bread baking.

CLAPP'S ORIGINAL BABY SOUP (UNSTRAINED)
(ADDED SALT)*Manufacturer*—Harold H Clapp Inc Rochester N Y

Description—An unstrained cooked soup stock prepared from potatoes, tomatoes, carrots, unpolished rice, cabbage, celery, meat broth, whole grain barley, salt, onions and water. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture—The preparation is the same as for Clapp's Original Baby Soup (THE JOURNAL June 24, 1933, p 2011) except that the material is not strained.

Analysis (submitted by manufacturer)—Essentially the same as for Clapp's Original Baby Soup. The crude fiber can be expected to be higher.

Vitamins and Claims of Manufacturer—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933 p 2011).

HENRY CLAY ROLLER EXTRACT FLOUR
(BLEACHED)CREAM ROLLER EXTRACT FLOUR
(BLEACHED)*Manufacturer*—Lexington Roller Mills Company, Lexington Ky*Description*—Soft red winter wheat "short patent" flours, bleached

Manufacture—Selected soft red winter wheat is cleaned, washed, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL June 18 1932 page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one fourth ounce per 196 pounds).

Claims of Manufacturer—For general baking in the home.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, OCTOBER 7, 1933

SURGICAL RELIEF OF CARDIAC PAIN

The recognition that deleterious effects caused by impulses traveling along fibers of the sympathetic nervous system may be prevented by severing the nerves surgically was a significant observation for the advance of medical science. These abnormal impulses vary; some produce serious arterial spasm, others smooth muscle inhibition, and some convey intense sensations of pain of visceral origin. The pain in angina pectoris was among the first to lend itself to surgical procedures, and in many cases definite alleviation of pain occurred. Jonnesco,¹ in 1916, was the first to operate on these patients. He removed at first the lower two cervical ganglions as well as the first thoracic ganglion. Later he included the first cervical ganglion. The results, however, proved too uncertain to warrant extensive trial. In 1923 Coffey and Brown² asserted that removal of the superior cervical ganglion alone, or even division of its cardiac branches, was sufficient. As a result a number of patients were subjected to this relatively simple procedure, although neurologists in America asserted in general that no fibers carried pain impulses to the brain by way of this ganglion. Cutler,³ who analyzed the results up to 1927, found that but half of the patients operated on could be considered as presenting a good result, whereas the mortality ranged from 4 to 14 per cent. Mixer and White,⁴ in 1931, described clinical evidence pointing to the thoracic rather than the cervical sympathetic as an advisable site of surgical attack in cardiac pain.

Obviously, if the surgeon is to interrupt nerves carrying impulses giving rise to pain he should know accurately their pathway. This is possible if he can identify among the many different kinds of fibers present in a given nerve the ones actually concerned

with the transmission of pain. This is now possible as a result of recent researches, both physiologic and anatomic, made at the Washington University School of Medicine by Heinbecker, Bishop and O'Leary. These investigators have offered physiologic proof that impulses resulting in pain are mediated by myelinated fibers of the somatic type, from 3 to 6 microns in diameter. It is possible, moreover, to recognize these fibers in sympathetic nerve trunks stained with osmic acid. Using this information, Heinbecker⁵ has studied the nerves containing sensory fibers from the heart and first portion of the aorta. He finds that sensory fibers ascend in all three sympathetic cardiac nerves to enter the superior, middle and inferior cervical ganglions. From here they enter the central nervous system in the fifth cranial nerve and the cervical gray rami communicantes. Afferent fibers from the heart also enter by the rami communicantes of the upper six or seven thoracic levels. These results afford an anatomic explanation for the beneficial results of Coffey and Brown. They show also the reason for a goodly percentage of failures by any of the usual procedures so far employed for the relief of the pain of angina pectoris. For instance, paravertebral alcohol injections at the upper thoracic levels do not interrupt the afferent fibers in the middle and superior cardiac nerves.

The present outlook, Heinbecker states, presents many possibilities. Armed with the newer knowledge, it seems clear that selective surgery offers ample opportunities for the relief of many cases, particularly those of referred pain. It is considered axiomatic that pain is referred to the body levels at which the visceral fibers enter. The level at which pain is felt in cardiac disease should be carefully studied in each case in order to select the proper site for surgical attack. There are, of course, many cases in which the pain is not referred but felt only within the thorax beneath the sternum. Here, accurate selection is impossible and the stellate and closely associated ganglions constitute the most advisable point of attack, since histologic studies demonstrate that the largest number of afferent fibers course through this structure. If, however, after one procedure relief is not secured, further pain pathways must be severed, the same criteria being used again for determining the level of surgical attack.

Surgical advance is often hampered by the difficulties inherent in purely clinical study. The relief of cardiac pain is a particular case in point. Research into nerve physiology of the type being carried out by the St. Louis investigators points the way toward a more rational surgical attack in these cases. The more clinical medicine leans on such physiologic and anatomic studies, the greater will be the accuracy of predictable results.

¹ Jonnesco, Thomas. Traitement chirurgical de l'angine de poitrine par la section du sympathique cervico-thoracique. Bull. Acad. de med. Paris 84, 93 (Oct. 5) 1920.

² Coffey, W. B. and Brown, P. K. The Surgical Treatment of Angina Pectoris. Arch. Int. Med. 31, 200 (Feb.) 1923.

³ Cutler, E. C. The Present Status of the Treatment of Angina Pectoris by Cervical Sympathectomy. Ann. Clin. Med. 5, 1004 (May) 1927.

⁴ Mixer, W. J. and White, J. C. Pain Pathways in Sympathetic Nervous System. Arch. Neurol. & Psychiat. 25, 986 (May) 1931.

⁵ Heinbecker, Peter, Bishop, G. H. and O'Leary, James. Pain and Touch Fibers in Peripheral Nerves. Arch. Neurol. & Psychiat. 29, 771 (April) 1933.

⁶ Heinbecker, Peter. Anatomic and Physiologic Criteria for Surgical Relief of Cardiac Pain. J. Thoracic Surg. 2, 517 (June) 1933.

TOOTH ENAMEL, DENTIN AND CARIES

Current knowledge of dental caries and particularly the etiologic factors involved are still the subject of profound confusion¹. This is true not only as it applies to the public and to physicians who observe caries incidentally, but even with respect to current interpretations by the dental profession. One reason for the existing confusion is that many persons fail to distinguish properly between caries and other dental maladies—an error that no dentist should commit. It would sometimes seem that each group of investigators is more intent on securing evidence for its own pet hypothesis than on establishing certain indisputable facts regardless of their immediate bearing.

The appealing aphorism that "a clean tooth never decays" has lost some of its pristine popularity. According to the White House Conference on Child Health and Protection,² studies more specifically directed toward the control of dental caries have recently emphasized that active caries should be definitely regarded as indicative of dietary deficiencies. The report cites the statement of Bunting that practically all students of the problem concur in the opinion that an adequate well balanced diet is inhibitive to this disease and advocate practically the same form of dietary procedure.

In current discussions the teeth are almost always classed, at least by nondental students of nutrition, along with the bones in any consideration of dental disorder. Physiology is quite well equipped at present to discuss the metabolism of the skeletal structures. Calcium and phosphorus, vitamin D and the parathyroid hormone are artfully woven into a story that is then passed on to the public in all sorts of ways. An uncritical reader soon visions a beautiful row of teeth without the carious blemishes that give so much concern. There are doubtless many delusions harbored on the basis of pseudoscientific guessing. At least one basis for securing a better understanding has recently been stressed by Martha Jones³ and her dental co-workers in Hawaii. They point out that a comparative study of enamel, dentin and bone in new-born and very young infants shows quite clearly that the formation of enamel and that of dentin in the unerupted teeth do not parallel each other but that those of bone and dentin do. Indeed this is to be expected they add since enamel is but an epithelial tissue arising in the ectodermal layer of the embryo, while bone and dentin are connective tissues originating in the mesoderm. The Hawaiian investigators allege that there often is a parallelism between the bone and the dentin forming mechanisms but an antagonism between the bone-dentin and enamel mechanisms.

Their observations indicate that the systemic factors controlling the formation and preservation of bone and dentin are identical but do not necessarily affect the enamel in the same direction. The results, they state, offer a logical explanation of why the teeth of children with marked stigmas of rickets are often well formed and free from decay, and why tooth decay may be rampant in rapidly growing, breast-fed infants in the tropics, with no evidence of rickets. It is helpful to realize adequately that bone-dentin and enamel forming mechanisms are not necessarily subject to the same factors.

According to Jones, in rickets the bone-forming mechanisms do not function properly, not because of an insufficiency of any bone-forming constituents in the diet, as is proved by the high incidence of the disease of babies fed on cow's milk, which contains much more calcium, phosphorus and vitamin D than human milk, but probably because of some "imbalance" that prevents the utilization of these elements. It may be that the "imbalance" is brought about under certain conditions by the excess of alkaline elements in cow's milk—a much greater excess than is found in human milk. The immediate hypothesis need not be hastily accepted that bone deposition thrives best under one potential reaction whereas the reverse seems to be true of enamel. The Jones thesis is that factors which accelerate calcification in the long bones, under certain conditions, may actually increase the liability of enamel to decay, and vice versa. The important aspect of the subject is to start thought along new channels where the devious ways have remained so confusing.

Current Comment

CAROTENE AND VITAMIN A IN BUTTER

Since the repeated demonstrations that a deficiency of vitamin A in the diet of experimental animals can be remedied by the inclusion of the natural pigment carotene, the view has developed that carotene is the precursor of vitamin A, being transformed in the process of metabolism in the animal body. Already investigations have been reported demonstrating the quantitative relationships between the pigment and the vitamin.¹ With the development of the subject, it has become obvious that the recognized vitamin A potency of many natural supplies of this food factor is due to one or the other of these substances or to a mixture of the two. Butter has from the first been considered a rich source of vitamin A and because of its color the question has frequently been raised as to the relative importance of the pigment in making up the total vitamin A potency. Brumman and Steenbock² have recently subjected this point to experimental study. Butter made from cream collected in each month of the

¹ Teeth and the Diet editorial J. A. M. A. 99: 64 (Aug. 13) 1912.

² Blackfan, Kenneth. Growth and Development of the Child. Part III. Nutrition. White House Conference on Child Health and Protection. New York: Century Company, 1932.

³ Jones, Martha K., Larom, N. P. and Pritchard, G. P. The Relationship Between Bone and Tooth Development in Infants. Am. J. Dis. Child. 45: 789 (April) 1933.

¹ Quantitative Conversion of Carotene to Vitamin A editorial J. A. M. A. 100: 1018 (April 1) 1933.

² Brumman, C. A. and Steenbock, Harry. J. Biol. Chem. 101: 547 (July) 1933.

year was examined for the content of carotene and of vitamin A by spectriographic analytic methods. Butter made in the summer contained a greater concentration of both the pigment and the vitamin than that made during the other seasons of the year, the difference between the April and August products being more than 100 per cent in both cases. However, according to the calculations of the Wisconsin investigators, only about 12 per cent of the total vitamin A potency of butter is accounted for by the carotene present. Since vitamin A can be looked on largely as a metabolic product from the carotene of the feed of the cow, these studies emphasize not only the extent of the transformation but also the ubiquitous distribution of the pigment. It would also appear from these studies that butter is of peculiar value as a source of vitamin A under conditions in which the absorption or transformation of carotene is faulty. Indeed, Dutcher, Harris and Guerrant² have shown that vitamin A from a cod liver oil concentrate is better utilized in the presence of liquid petrolatum than is carotene. This observation, together with the observations of Baumann and Steenbock, provide valuable supplements to the current knowledge of the biologic relations of carotene and vitamin A, a topic that will doubtless receive much further attention from investigators in this field.

THE WATER CONTENT OF THE FECES

The widespread use of a great variety of laxatives and aperients in this country cannot fail to command the careful attention of the medical profession. Every household medicine chest includes one favorite prescription or more often some widely vaunted proprietary product of undescribed composition. The attack on constipation by the afflicted public involves the use of such diverse agents as bran, agar, phenolphthalein, cascara, castor oil and mineral salts—to mention a few products exhibiting unlike pharmacologic or physiologic actions on the alimentary tract. This raises, first of all, the question as to what constitutes a normal stool—a problem recently discussed in detail in *THE JOURNAL* by a group of investigators¹ at the Yale University School of Medicine. It is well established² that the final removal of water from the intestinal contents—their gradual desiccation so as to produce characteristic feces—occurs beyond the ileocecal valve. Studies by Steggerda³ at the College of Medicine of the University of Tennessee on experimental animals indicate that concentration of fecal material took place in the cecum and rectum, while a small amount of absorption was noted in the colon proper. Determinations were made also on human stools, the results showing that the feces in the rectum contain approximately 10 per cent less water than those lying in the colon just proximal to the rectum. Roentgenograms show that fecal

material is lodged in the rectum long before the desire to defecate is felt. Obviously these facts have an important bearing on the relief of certain types of constipation or, on the other hand, the prevention of objectionable diarrheas.

VIRULENCE OF MILK-BORNE BACTERIA

Clinicians trained in the conventional law of bacterial adaptation will receive Shope's¹ report of a paradoxical adaptation of the pseudorabies virus with skepticism. Yet his report is characteristic of a mass of unconventional data now being gathered by competent research specialists. Dr. Shope claims that repeated passage of this virus through a new animal species may reduce its pathogenicity for this species without demonstrable changes in its infectivity for its original animal host. His studies were made with a strain of "mad itch" virus, almost invariably fatal for both rabbits and guinea-pigs when given either intracerebrally or subcutaneously. Death usually occurs within sixty to eighty hours. Repeated rabbit passage is without demonstrable effect on its infectivity for either animal species. Guinea-pig passage, however, markedly decreases its guinea-pig infectivity, subcutaneous tests with multiples of the previous minimum lethal dose causing no demonstrable symptoms in 95 per cent of the cases. The virus still remains fully virulent for rabbits. Analysis of this animal-specific reduction in pathogenicity shows that it is not due to a specific antibody mechanically carried in the infectious material. Dr. Shope's result is timely in its bearing on the much discussed problem of the probable virulence of milk-borne bacteria.

COMBINED ARSPHENAMINE-ULTRAVIOLET THERAPY

The possibility of increasing the therapeutic effects of arsenicals by the simultaneous use of ultraviolet rays has been extensively studied during the last three years by European investigators. Orlow and Lewinson¹ of the venereal institute at Moscow studied the curative effects of combined arspenamine-ultraviolet therapy on experimental syphilis in rabbits. They report that ultraviolet radiation increases the spirocheticidal effects of neoarsphenamine and does not demonstrably increase its toxic effects. It causes substerilizing doses of the arsenical to become therapeutically effective. They unhesitatingly recommend its clinical trial. A definite rationale for this combination therapy has been suggested by other investigators. Roskin and his co-workers,² for example, state that exposure of mice to ultraviolet radiation causes a new immunity factor to appear in the blood stream. This "factor" is without direct effect on trypanosome infections. Transferred to nonirradiated mice, however, the factor greatly increases the trypanocidal action of arsenicals. From a study of splenectomized and endothelial-blockaded mice they believed that the new factor is formed or secreted by the reticulo-endothelial cells.

² Dutcher R. A., Harris P. L. and Guerrant N. B. Abstracts of Papers Div. Biol. Chem. Am. Chem. Soc. Washington March 1933.

¹ Cowgill G. R., Anderson W. E. and Sullivan A. J. The Form of the Stool as a Criterion of Laxation. *J. A. M. A.* **101**: 273 (July 22) 1933. Burnett F. L. The Form of the Feces. *ibid.* **101**: 728 (Aug. 26) 1933.

² Observations on the Small Intestine. editorial. *J. A. M. A.* **101**: 1003 (Sept. 23) 1933.

³ Steggerda F. R. Observation on the Variation in Water Content of the Fecal Material Along the Colon. *Am. J. Physiol.* **105**: 91 (July) 1933.

¹ Shope R. E. *J. Exper. Med.* **57**: 925 (June) 1933.
² Orlow S. S. and Lewinson L. B. *Ztschr. f. Immunitätsforsch.* **78**: 264 (No. 3/4) 1933.

² Roskin G. and Romanowa K. *Ztschr. f. Immunitätsforsch.* **67**: 94 (No. 1/2) 1930.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8 55 to 9 o'clock central standard time, over Station WBBM (770 kilocycles, or 389 4 meters)

The subjects for the week are as follows

October 10 Anemia
October 12 Guaranteed Cures

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

October 14 Diphtheria

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

ALABAMA

Personal—Dr Ralph D Neal has been appointed health officer of Monroe County, succeeding Dr Thomas E Tucker, who resigned, September 1 Dr Neal was formerly health officer of Clarke County, with headquarters in Grove Hill—Dr Reuben J Guest, Jr, Fort Payne, has been appointed health officer of DeKalb County, succeeding Dr Lee Weathington, resigned

Society News—At a meeting of the Bullock County Medical Society in Union Springs, August 9, the speakers were Drs Charles M Franklin on "Malaria as a Complication", Clark Hilton Rice, Montgomery, "Treatment of Habit Spasms by Psychotherapy," and Alfred A Walker, Birmingham, "Prophylaxis and Treatment of Infectious Diarrhea"—The Elmore and Tallapoosa county medical societies were addressed at their annual joint meeting recently, among others by Drs Archie E Thomas, Montgomery on "Conservative Treatment of Eclampsia", James Harold Watkins, Montgomery, "Cardiac Failure Associated with Pain" and Lewis H Hamner, Camp Hill, "Abnormal Blood Pressure"—At a recent meeting of the northeastern division of the Alabama State Medical Association, the speakers included Drs James O Morgan, Gadsden, on "Hormone Test for Pregnancy," and Louise H Branscomb, Birmingham, "Hormone Therapy in Gynecology"

ARKANSAS

Dr Brooksher Elected State Secretary—Dr William R Brooksher Jr, Fort Smith was elected secretary-treasurer of the Arkansas Medical Society at a meeting of the council in Little Rock, September 15 Dr Brooksher fills the unexpired term of the late Dr William R Bathurst Little Rock.

Society News—Speakers before the Tenth Councilor District Medical Society September 12 included Arthur M Harding Ph.D, University of Arkansas, Fayetteville on "Education and the New Deal" and Drs Leonce J Kosmisky, Texarkana "Aspects of Organized Medicine", Frederick H Krock, Fort Smith "Peripheral Vascular Disease" William A Fowler, Fayetteville, "Birth Injuries" and Joseph W Larimore, St Louis "Differential Diagnosis of Diseases of the Right Colon"—The Conway County Medical Society and the Yell-Pope County Medical Society recently combined to form the Tri-County Medical Society and the first meeting of the new group was held in Russellville August 10

CALIFORNIA

Mussel Poisoning—Seven cases of mussel poisoning occurred in Redwood City July 8 among persons who had eaten mussels gathered at Half Moon Bay the bulletin of the state health department reported

Course in Medical Statistics—Dr Emil Bogen Olive View, began a course of lectures, September 20, at the Los Angeles County General Hospital, on medical statistical methods Tentative plans call for six lectures No fee is charged

Changes in Health Officers—Dr Harold E Morrison, formerly with the Los Angeles school department, has been appointed health officer of San Mateo County, succeeding Dr Frank Holmes Smith, San Bruno The county has a new county charter which gives the health officer additional duties relating to indigent relief, charities and similar activities Dr Albert H Newton, Yreka, has been appointed health officer of Siskiyou County to succeed Dr Charles Pius The city of Burbank has contracted with the Los Angeles County Health Department for the administration of its public health effective September 1, with headquarters in the Glendale Health Center Dr Gilbert H Johnson has been appointed health officer of Mono County, succeeding Dr Gilbert A Kelley, Bridgeport

Society News—Dr William J Kerr, San Francisco was the speaker at a joint meeting of the Los Angeles County Medical Association and the section on internal medicine, October 5, on "Clinical Application of Methods for Testing the Functional Capacity of the Liver" Dr Kerr addressed the San Diego Academy of Medicine, October 2 and 3 on "Diseases of the Liver and Liver Function Tests" and "Clinical Observations on Deficiency Diseases," respectively—At a meeting of the Symposium Society, Los Angeles September 27, peritoneoscopy was discussed by Drs John C Ruddock and Albert J Scholl, Jr, Los Angeles—Speakers before the Los Angeles Clinical and Pathological Society, September 28, included Drs Ernest M Hall and George Lawrence Chaffin on "Malignant Adenoma of Parathyroid Gland"—A joint meeting of the Los Angeles Society of Ophthalmology and Otolaryngology and Long Beach Eye and Ear Society, September 27, at Long Beach, was addressed, among others, by Dr Howard C Naffziger, San Francisco, on "Surgical Experiences with Ocular Myopathies and Intra-Orbital Tumors"

COLORADO

State Medical Election—Dr Gerald B Webb, Colorado Springs, was installed as president of the Colorado State Medical Society at its annual meeting in Colorado Springs in September, and Dr Nicholas A Madler, Greeley, was chosen president-elect Other newly elected officers include Drs Frank E Rogers, Denver, Arthur G Taylor, Grand Junction, Clarence E Sidwell, Longmont, and Ward C Fenton, Rocky Ford, vice presidents, and John S Bouslog, Denver, constitutional secretary Re-elected officers are Dr Leo W Bortree, Colorado Springs, treasurer, and Mr Harvey T Sethman, Denver, executive secretary The next annual session will be held at Colorado Springs in September, 1934 The constitution was amended at this meeting to increase the number of councilor districts of the society from five to nine, with a view to reducing the amount of travel required of councilors In accordance with a recommendation of the Committee on Cancer Education a new committee of the same name will be appointed to conduct a series of cancer symposiums before the county medical societies The society appropriated \$300 to be used by the administration of the University of Colorado School of Medicine and Hospitals to change the system of admissions to Colorado General Hospital

CONNECTICUT

Program to Detect Tuberculosis—The New Haven departments of health and education will conduct another program in the city schools this fall in an effort to detect tuberculosis in school children While the plan used last year for the mass examination of children will be repeated (THE JOURNAL March 11, p 745) the method will differ in that greater effort will be placed on known contacts Chest roentgenograms of children will be taken for which parents will pay reduced charges through special arrangements The Connecticut Health Department plans to initiate a similar tuberculosis campaign throughout the state this fall (THE JOURNAL, August 5, p 453)

DELAWARE

Tumor Clinics—Each county in the state now has a tumor clinic at one or more hospitals as a part of the program of statewide cancer control approved by the Delaware Committee of the American Society for the Control of Cancer at its annual meeting January 11 Staffed by selected groups of local physicians the clinics and a free tissue diagnosis service are each under the general management of one person who is also the pathologist The clinics are operated uniformly in an advisory

capacity only, without financial gain to the sponsoring institution and without expense to the referring institutions and physicians. Patients are referred back to their own physicians or hospitals, and letters are sent giving the opinion of the clinic as to diagnosis and recommendation for treatment. The clinics meet once a month or once in two weeks, depending on the size of the hospital.

DISTRICT OF COLUMBIA

Davidson Lecture—Dr Edwin A. Merritt will deliver the Davidson Lecture, October 11, on "X-Ray Treatment of Bone Conditions Produced by Hyperparathyroidism." The lecture was established by the Medical Society of the District of Columbia in 1929 as a memorial to Dr Edwin Young Davidson, a former president (THE JOURNAL, June 17, p. 1942). It is given every two years.

Changes in Faculty at Georgetown—Dr George H. Hansmann, assistant professor of pathology, State University of Iowa College of Medicine, Iowa City, has been appointed associate professor at Georgetown University School of Medicine, Washington. Dr James A. Gannon has resigned as associate professor of surgery, after twenty-five years' association with the department.

GEORGIA

Meeting of Pediatricians—The first annual scientific meeting of the Georgia Pediatric Society will be held in Atlanta, October 12, under the presidency of Dr Joseph Yampolsky. The following program has been announced:

Dr. Arthur F. Abt, Chicago: Use of Carbohydrates in the Diet and Treatment of Infants.

Dr. Horton Casparis, Nashville, Tenn.: Allergy in Children.

Dr. Charles G. Kerley, New York: A Demonstration Relating to Gastrointestinal Tract Anorexia, the Different Forms of Ptois, Mucous Gastritis and Intestinal Dysfunction.

A symposium on tuberculosis in children will be conducted by Drs. Casparis, James J. Clark, Atlanta, and Kellie N. Joseph, Alto. The Fulton County Pediatric Society will be host to the Georgia Pediatric Society and the Fulton County Medical Society at a buffet supper preceding the evening session. Dr. Walter E. Barber, president of the county medical society, will give the welcoming address, and Dr. William A. Mulherin, Augusta, the response. Drs. Casparis and Abt will discuss "The Mental Health of Children and Anemias of Infants," respectively, and Dr. Kerley will present a symposium on the tired child.

ILLINOIS

Society News—At a meeting of the DeKalb County Medical Society, September 28, Dr. Clement L. Martin, Chicago, spoke on anorectal diseases. Dr. Francis E. Seneat, Chicago, discussed "Role of Fungus Infections in Dermatology," before the Will-Grundy Medical Society, Joliet, September 27.

Health Surveys—Arrangements have been completed by the Illinois State Health Department to survey the health work and needs of schools in Elgin, Nokomis, Litchfield, Lebanon, Newton, Oblong, Altona and Browning, as a part of a statewide health program. The school surveys, which are made on request, are conducted by Dr. Robert C. Cook of the division of child hygiene.

Chicago

Society News—Speakers before the Chicago Council of Medical Women, October 6, were Drs. Alice K. Hall and Georgiana D. Theobald on "Treatment and Education of the Profoundly Deaf Child" and "Ocular Tumors in Children," respectively. At a meeting of the Chicago Pathological Society, October 9, Dr. Edward H. Hatton will give his official address as president on "The Origin and Pathologic Significance of the Epithelium Found About the Roots of Teeth."

INDIANA

Personal—Under a recent reorganization of the Indiana State Board of Medical Registration and Examination by Governor McNutt, Dr. William R. Davidson, Evansville, has again been appointed secretary. New members include Dr. Leslie C. Sammons, Shelbyville; Dr. Norris E. Harold, Indianapolis; and Earl O. Peterson, D.O., LaPorte.

Society News—Dr. Herman L. Kretschmer, Chicago, conducted a clinic before the Elkhart County Medical Society at Elkhart, September 7. The Gibson County Medical Society, Princeton, heard Dr. Oliver O. Alexander, Terre Haute, discuss industrial surgery, September 11. Speakers before the Tippecanoe County Medical Society, Lafayette, September 14, were Drs. Max A. Bahr and Walter L. Bruetseh, Indianapolis, on epidemic encephalitis and parkinsonism, respectively.

Dr. Karl M. Koons, Indianapolis, discussed goiter with special reference to borderline cases before the Huntington County Medical Society at Huntington, September 5. At a meeting of the Kosciusko County Medical Society, Warsaw, September 12, Drs. C. Norman Howard, Warsaw, and Charles E. Thoma, Leesburg, spoke on encephalitis. A symposium on pulmonary tuberculosis as the general practitioner sees it was presented before the Hancock County Medical Society, recently, the speakers were Drs. Charles E. McCord, Samuel W. Hervey, Jesse C. Ferrell, Stewart Slocum, and Byron J. Deakyn, D.D.S., all of Fortville. Speakers before the Indianapolis Medical Society, October 3, were Drs. Dunn Hamilton Row and William F. Clevenger, on "Detachment of the Retina" and "Modern Phases of Sinus Abnormality," respectively. Dr. Walter F. Kelly, president, also spoke. Among others, Drs. Norris E. Harold and Walter C. Pennington will address the society, October 10, on "Polycythemia Vera" and "Study of Gastric Rugae," respectively. A symposium on orthopedics will be presented before the society, October 17, one on birth control, October 24, and one on diet, October 31.

IOWA

Society News—The Hardin County Medical Society heard Dr. Melvin W. Binger, Rochester, Minn., discuss nephritis, recently. Dr. Walter L. Biering, Des Moines, President Elect, American Medical Association, was the principal speaker at the annual picnic of the Second Councilor District Medical Society at Clear Lake, August 18, on the history of medicine.

KENTUCKY

State Medical Election—Dr. Carl C. Howard, Glasgow, was chosen president-elect of the Kentucky State Medical Association at the annual meeting in Murray, September 14, and Dr. W. M. Martin, Harlan, was installed as president. Vice presidents elected were Drs. Henry G. Sandlin, Richmond; John C. Morrison, Hickman; and Edward R. Palmer, Louisville. Dr. Arthur T. McCormack, Louisville, was reelected secretary. The 1934 meeting will be held in Harlan.

Society News—Drs. Ellis S. Allen and James H. Pritchett, Louisville, addressed the Christian County Medical Society, Lafayette, August 31, on "Blood Transfusion and Its Various Aspects" and "Summer Diarrhea in Children," respectively. Dr. Louis Frank, Louisville, among others, addressed the Third District Medical Society at Bowling Green, August 23, on cancer of the cervix. Drs. David W. Heusinkveld and Gordon F. McKim, Cincinnati, among others, addressed a combined meeting of the Licking Valley and Mason County medical societies in Maysville, September 20, on pulmonary tuberculosis and a new operation for nephroptosis, respectively. At a meeting of the Jefferson County Medical Society, September 18, Dr. Ira N. Kerns, Louisville, discussed traumatic surgery and Mr. Charles Morris, "The Doctor on the Witness Stand."

LOUISIANA

Fall Clinic Canceled—At a special meeting of the Shreveport Fall Clinic Association, August 31, it was decided to cancel the fourth annual fall clinic, to have been held this year. The reason given for this action was that the Fourth District Medical Society, the Tri-State Medical Society and the Louisiana State Medical Society are all scheduled to meet in Shreveport.

MAINE

Society News—The Androscoggin County Medical Society was addressed at Lewiston, August 25, by Dr. Joseph H. Pratt, Boston, on "The Medical Profession in the Control of Tuberculosis." Speakers before the Kennebec County Medical Society at Belgrade Lakes, September 7, were Drs. Warren E. Kershner, Bath, president state medical association, and Forrest C. Tyson, superintendent of the state hospital, Augusta. At a meeting of the Waldo County Medical Society in Belfast, recently, the speakers were Drs. Arthur Paul Wakefield, Fairfield, on results in lung surgery, George W. Holmes, Boston, advances made in X-ray diagnosis and treatment, Eugene H. Drake, Portland, uses of the electrocardiograph in diagnosis, and William A. Ellingwood, Rockland, sinuses. The Washington County Medical Society was addressed, August 23, by Drs. Hugh A. Farris, St. John, N. B., on "Can the Electrocardiograph and X-Rays Be of Value to the General Practitioner?" Harrison V. Robinson, Bangor, "Exophthalmic Goiter," Russell J. Collins, St. John, "Changing Viewpoints Regarding Tuberculosis." Warren E. Kershner, Bath, present conditions in the state medical association and James H. McCurdy, Springfield, Mass., heart conditions.

MARYLAND

Pasteurized Milk—A regulation limiting the sale of milk to products that are pasteurized or certified, recently adopted by the Baltimore Health Department, became effective, September 1.

Meat Inspection Ordinance Amended—*Baltimore Health News* announces the following changes among others, brought about by a recent amendment of the meat inspection ordinance.

Persons processing meat, such as curing in large quantities cooking and smoking meat products and those manufacturing meat food products shall obtain a license.

Persons who operate a meat business in the counties and desire to sell their products in Baltimore are required to pay charges for inspection.

Route trucks operating in the city selling to the consumer must now obtain a license and in addition comply with the regulations governing the retail sale of meat products.

All renderers and collectors of bones and fat are brought under health department supervision and control.

All out of state shippers of meat products who desire to sell in Baltimore are required to obtain a license and to comply with regulations governing their shipments into the city.

MASSACHUSETTS

Personal—Dr Robert S. Quimby, Watertown, has been appointed employment director of the state—Dr Samuel T. Ladd, Portsmouth, N. H., has been named comptroller of customs at Boston.

Memorial to General Wood—A memorial tablet will be unveiled in the new Harvard Memorial Church October 9 in honor of the late Major Gen. Leonard Wood, former chief of staff of the United States Army and governor general of the Philippines. The tablet was recently placed in the church by sixteen men who served with him as aides-de camp. General Wood graduated from Harvard Medical School in 1884 and was awarded an honorary degree of doctor of laws in 1899.

MICHIGAN

Personal—Reuben L. Kahn, D.Sc., Ann Arbor, attended the immunologic conference in Rome, September 25-October 1 sponsored by the Volta Foundation of the Royal Academy of Italy. He presented two papers on 'New Serology of Syphilis' and 'Tissue Reactions in Immunity.'

Society News—Dr. Cyrus C. Sturgis, Ann Arbor, addressed the Calhoun County Medical Society, Battle Creek, September 5, on 'Treatment of Secondary Anemia.'—At a meeting of the Oakland County Medical Society, Pontiac, September 21, Dr. Edward D. Spalding, Detroit, spoke on 'Cardiac Disease, with Special Reference to Therapy.'

President's Night—In the future, the first regular meeting night in each month of the Wayne County Medical Society will be designated as 'President's Night.' October 2 marked the beginning of this practice and was in honor of Dr. Alexander W. Blain, the newly elected president of the society, who gave an address. Mr. Albert Kahn, vice president of the Detroit Institute of Arts, where the society plans to hold its meetings in the future gave the address of welcome, and A. M. Smith, Ph.D., of the Detroit *News* spoke on 'The Philosophy of Medicine.' Mr. Malcolm W. Bingay, executive director of the Detroit *Free Press* was presented with an honorary membership in the society at this meeting.

MINNESOTA

Practices Without License—Dr. John G. Halland pleaded guilty to a charge of practicing medicine without a license September 9 in the district court at Fergus Falls. Halland who had been practicing for two months at Pelican Rapids, was formerly licensed in Minnesota but his license was revoked in November, 1931, because of his use of narcotics (THE JOURNAL, Dec. 19, 1931, p. 898). Halland was sentenced to six months in the Otter Tail County Jail but the sentence was suspended on his promise to return to his home in Fargo, N. D. and to obey the laws of Minnesota and North Dakota. He is to submit a written report to the court monthly until November, 1934 showing his whereabouts and occupation.

MISSOURI

Medal Awarded to Dr. Goldstein—Dr. Max A. Goldstein, St. Louis, was awarded a medal for outstanding work in the study and rehabilitation of the deaf child at the recent annual meeting of the American Laryngological Rhinological and Otolaryngological Society in Chicago. The award also included recognition of Dr. Goldstein's recent book, 'Problems of the Deaf.'

Personal—Dr. Josephine B. Neal of the New York City Health Department was guest of honor at a luncheon Sep-

tember 13, given by women members of the St. Louis Medical Society. Dr. Neal is in St. Louis studying encephalitis.—Dr. Timothy S. Bourke, Kansas City, was appointed a member of the state board of health, August 16, for a term of four years, succeeding Dr. Herman S. Gove, Linn, who resigned to accept an appointment as chief assistant to Dr. Elmer T. McGaugh, state health commissioner.—Dr. Henry Gettys was recently made medical director of the St. Louis Police Department, succeeding Dr. George W. Becker.

Tumor Clinic Established—A tumor clinic was opened at the Fulton State Hospital, recently. For the present only ambulatory patients will be accepted for treatment. The clinic was established for the care of indigents only and since funds are not available for extensive social service work at the clinic itself, a rule has been adopted, providing for the certification of patients by a member of the Missouri State Medical Association and a recognized social agency. Following the adoption of a resolution by the State Eleemosynary Board August 14 to make radium at the Fulton State Hospital available for the treatment of cancer among the indigent, the cancer committee of the state medical association and the state hospital cooperated in the plan to establish the clinic.

NEBRASKA

Dr. Riley Appointed Dean—Dr. Bryan M. Riley, professor of medicine, has been appointed dean of Creighton University School of Medicine, Omaha to succeed the late Dr. Herman von W. Schulte. Dr. Riley has been serving as assistant to the Rev. John J. McInerney, regent of the university, who has been acting dean since Dr. Schulte's death in July, 1932. Dr. Riley was graduated from Creighton in 1900, served as instructor in medicine from 1905 to 1907 and later was appointed professor and head of the department of medicine. He was secretary of the administrative board of the university for thirty-two years. Dr. Adolph Sachs, professor of medicine, succeeds Dr. Riley as head of the department. He has been a member of the faculty since his graduation from Creighton in 1907. At present Dr. Sachs is president of the Nebraska State Medical Association and the Omaha Mid-West Clinical Society.

NEW YORK

Society News—Dr. Stanley E. Alderson addressed the Medical Society of the County of Albany, September 27, on 'Surgical Infections of the Lung and Pleura.'—The annual conference of sanitary officers and school physicians of the state of New York was held in Syracuse, September 27. Among speakers were Drs. Frederick W. Sears, Syracuse, on immunization of children with parental blood, Charles G. Lenhart, Spencerport, relation of the general surgeon to the health officer and George H. Ramsey of the state health department, Albany, communicable disease control in schools. At an evening meeting Drs. Frederick H. Flaherty, Syracuse, president, Medical Society of the State of New York, and Thomas Parrin Jr., Albany, state health officer, among others, spoke on 'The Physician and Health Officer' and 'Milk Control' respectively.—Dr. Eugene F. Traub, New York, addressed the Medical Society of the County of Nassau, Mineola, September 26, on 'Ringworm Eczema and Dermatitis. Newer Methods of Treatment' and Hon. Leone D. Howell, organizer of the Nassau Clearing House Association, 'Influenza as It May Affect the Doctors.'—The annual conference of the secretaries of component county societies of the Medical Society of the State of New York was held in Albany, September 13. Medical relief under welfare programs and hospital dispensary problems were discussed.—The New York State Association of Public Health Laboratories will hold its midyear meeting at the state laboratory in Albany, November 3.

New York City

Friday Afternoon Lectures Begin—The fall series of Friday afternoon lectures sponsored by the Medical Society of the County of Kings began October 6 with an address by Dr. Foster Murray Brooklyn, on present-day management of pulmonary tuberculosis. Dr. William W. Hala will speak October 13, on 'Laboratory Tests in the Diagnosis of Disease.' Dr. Leo Loewe, October 20, on rheumatism, and Dr. William H. Price, October 27, on the rectum.

Beaumont Centennial Meeting—The first fall meeting of the New York Academy of Medicine, October 5, was devoted to the celebration of the one hundredth anniversary of the publication of William Beaumont's 'Experiments and Observations on the Gastric Juice and the Physiology of Digestion.' Surg. Gen. Robert L. Patterson of the U. S. Army presented a paper on Beaumont as an army officer. Dr. Harris A.

Houghton, a reading from the Beaumont-St Martin contract, and Dr Walter B Cannon, Boston, discussed "Beaumont's Book After a Hundred Years." An exhibition of books and other memorabilia relating to the works, life and travels of Beaumont was shown.

OHIO

Lectures on Abnormal Psychology—Dr Maurice Levine, assistant professor of psychiatry, University of Cincinnati College of Medicine, began, September 26, a course of evening lectures on abnormal psychology.

Health Survey of Hamilton County—Dr Joseph L. Mountain, surgeon of the U S Public Health Service, has begun a survey of public health activities in Cincinnati and Hamilton County at the request of the bureau of governmental research. The survey will include the health departments, hospitals, clinics, school health and other activities in the health field.

Society News—Dr Anderson Hilding Duluth, Minn., will address the Academy of Medicine of Cincinnati, October 9, on "Physiology of the Upper Respiratory Tract in the Light of Some New Research Developments." Dr William J Bleckwenn, Madison, Wis., will speak, October 16, on encephalography. Dr Hilding will also present a paper before the Cincinnati Oto-Laryngological Society, October 10 on "Defense of the Nasal Mucosa Against Bacterial Invasion."

PENNSYLVANIA

Society News—The library of the Pittsburgh Academy of Medicine recently reported that, during the year ended June 6, 1941 books were lent and 1,748 reference questions answered. The library contains 13,000 volumes.—Dr Francis C Grant, Philadelphia, addressed the Warren County Medical Society, August 21, on "Head Injuries."

Practitioners Honored—Drs Fayette L Inslee, LeRaysville, and Phillip B Williams, Pottersville, were guests of honor at a dinner given by the Bradford County Medical Society and other friends in their communities, August 7, as a testimonial to their thirty-five years of service. Dr Stanley D Conklin, secretary of the county society, presided and Dr Donald Guthrie, Sayre, president-elect of the Medical Society of the State of Pennsylvania, made the principal address.

Philadelphia

Society News—Dr Andrew MacPhail, professor of medical history, McGill University Faculty of Medicine Montreal delivered the thirty-first Mary Scott Newbold Lecture of the College of Physicians of Philadelphia October 4, on "The Reading of History."—An eye section has been organized in the Philadelphia County Medical Society, with Dr Charles R Heed as chairman and Dr Sidney L Olsho, secretary.

RHODE ISLAND

Dr Leonard Retires—Dr Charles H Leonard, a member of the staff of the health department of Providence for sixty-three years, resigned in August at the age of 91. He had been in charge of vaccinations for the department since 1870, two years after his graduation from the College of Physicians and Surgeons of Columbia University, New York.

Society News—Members of the Rhode Island Medical Society were guests of the State Public Welfare Commission at the State Hospital for Mental Diseases, Howard, September 7. Dr Arthur P Noyes, superintendent of the hospital, spoke on present-day conceptions of mental disease and members of the staff demonstrated various forms of mental disease.

SOUTH CAROLINA

Professor of Anatomy Appointed—Arthur Marvel Lassek, Ph.D. Chicago, has been appointed professor of anatomy at the Medical College of the State of South Carolina, Charleston, to succeed Dr William F R Phillips, retired. Dr Lassek received his advanced degree at Northwestern University, Chicago, in 1931 and taught anatomy at the University of South Dakota School of Medicine the following year. During 1932-1933 he was studying at Northwestern toward a degree in medicine. Dr Phillips was professor of anatomy at the Medical College of South Carolina for about eighteen years.

Society News—Dr Calvin C Applewhite of the U S Public Health Service addressed the Orangeburg Medical Society, August 31, on typhus and allied conditions. This society is composed of physicians of Bamberg Calhoun and Orangeburg counties.—Speakers at the annual meeting of the

Seventh District Medical Association at Happy Haven near Kingstree, included Drs J Heyward Gibbs, Columbia S.C. "Differential Diagnosis of Hookworm Disease and Duodenal Ulcer", Charles J Lemmon, Sumter, "Fractures of the Humerus", Robert E Abell Chester, president, South Carolina Medical Association "Future of Our State Medical Association," and William Lgleston, Hartsville, "Organized Medicine."

TENNESSEE

Health at Memphis—Telegraphic reports to the U S Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended September 21 indicated that the highest mortality rate (19) appeared for Memphis and the rate for the group of cities, 9.8. The mortality rate for Memphis for the corresponding week of 1932 was 13.9 and for the group of cities, 9.6. The annual rate for the eighty-five cities for the thirty-three weeks of 1933 was 10.9 as against a rate of 11.2 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

UTAH

State Medical Election—Dr David C Budge, Logan was chosen president-elect of the Utah State Medical Association at the annual meeting in Salt Lake City, September 12, and Dr Francis A Goeltz, Salt Lake City was installed as president. Vice presidents elected are Drs Earnest P Mills, Ogden, John G McQuarrie, Richfield, Mabel Skolfield, Salt Lake City, Dr Leland R Cowan, Salt Lake City, was reelected secretary and Dr Franklin H Raley, Salt Lake City, treasurer. The 1934 meeting will be held in Salt Lake City in conjunction with the meeting of the Pacific Northwest Medical Association.

WASHINGTON

State Medical Election—Dr Carroll L Smith, Spokane was elected president of the Washington State Medical Association at the annual meeting in August. Dr J Reid Morrison, Bellingham, vice president, and Dr Curtis H Thomson, Seattle, secretary, were reelected. The next annual session will be held in Spokane.

GENERAL

Nutrition Institute Reorganized—The American Institute of Nutrition has been reorganized within the past year to function as a scientific society. It was originally founded to own and publish the *Journal of Nutrition*, but, under the new arrangement the journal will be taken over in January by the Wistar Institute Philadelphia. The membership of the reorganized institute has been expanded and plans made for an annual meeting, which for the present, will be in connection with, although not a part of, the Federation of American Societies of Experimental Biology. The institute now has 160 members, and its officers are Lafayette B Mendel, Ph.D. New Haven, president, Henry C Sherman, Ph.D., New York, vice president and John R Murlin, Ph.D. Rochester, N.Y., secretary. Dr Murlin will continue as editor of the journal.

Western Obstetric Meeting—The third annual meeting of the Pacific Coast Society of Obstetrics and Gynecology is to be held in Portland, Ore., October 19-21, under the presidency of Dr Albert Mathieu, Portland. Among speakers will be

Dr William C McKee Los Angeles Essential Hypertension as a Complication of Pregnancy
Dr Robert Glenn Craig San Francisco Pelvic Pain
Dr Theodore W Adams Portland Ore Dysmenorrhea
Dr Ludwig A Emge San Francisco Influence of Pregnancy on Tumor Growths
Dr Albert W Holman Portland Ore Eclampsia
Dr Richard J O Shea Seattle Chorio Epithelioma

The morning of Friday, October 20, will be devoted to clinical and pathologic demonstrations at Multnomah Hospital by Portland physicians.

Vital Statistics of Large Cities—The New York City Department of Health recently compiled comparative vital statistics for thirty large cities of the United States, relating to a population of about 28 million. The figures for 1932 which were supplied by the health officers of the respective cities, gave a general death rate of 11.26 per thousand of population, birth rate, 15.88, and infant mortality, 53.66 per thousand live births. Boston had the highest birth rate, 21.63, San Francisco the lowest, 11.19. New Orleans had the highest death rate, 16.11. Detroit the lowest, 8.69. New Orleans also

had the highest infant mortality rate, 7572, Portland Ore, 3346. The health department's bulletin warns, however, against comparisons of crude death rates as measures of relative healthfulness of various communities. The age and sex composition of the population and the proportion of Negroes have a marked influence on the death rate. Many of the cities have also a considerable proportion of deaths among nonresidents because of the fact that the hospitals of these cities draw hospital patients from a large surrounding area.

Society News—Dr Curtis C. Mechling, Pittsburgh, was elected president of the American Proctologic Society at its recent annual meeting. Dr E. Jay Clemons, Los Angeles, was made vice president and Dr Frank G. Runyeon, Reading, Pa., reelected secretary. The 1934 meeting will be held in Cleveland, June 11-12. The twenty-fifth anniversary meeting of the Association of Surgeons of the Pennsylvania Railroad was held in Cincinnati, September 22-23. Among speakers were Drs. Walter E. Dandy, Baltimore, on "Diagnosis and Treatment of Lesions of the Cranial Nerve"; Harry E. Mock, Chicago, "Compression Fracture of the Spine"; and Fred H. Albee, New York, "Bone Carpentry." Dr Charles H. Gowan, Glendale, Calif., was elected president of the Aero Medical Association of the United States at the recent annual meeting in Chicago, and Dr David S. Brachman, Detroit, reelected secretary. The 1934 meeting will be held in Washington, D. C., September 1-3. Dr John H. Hale, professor of surgery, Meharry Medical College, Nashville, Tenn., was designated president-elect of the National Medical Association at the recent annual meeting in Chicago. The annual session will be held in Nashville in 1934. The annual meeting of the Society of Plastic and Reconstructive Surgery will be held in New York, October 16-18, at the New York Academy of Medicine and various hospitals. Dry clinics will be presented Monday at Sydenham Hospital and New York Post-Graduate Medical School and Hospital, Tuesday morning at Manhattan Eye, Ear and Throat Hospital and New York Hospital, and Wednesday morning at the Institute of Ophthalmology, Columbia Medical Center.

Association of Medical Colleges—The annual meeting of the Association of American Medical Colleges will be held in Rochester, Minn., October 30, and in Minneapolis, October 31-November 1. A symposium on the report of the Commission on Medical Education (the relation of the number of medical graduates to the public need) will open the meeting, Monday, with the following physicians as speakers:

Willard C. Rappleye, dean, Columbia University College of Physicians and Surgeons, New York.
William D. Cutter, Secretary, Council on Medical Education and Hospitals, American Medical Association, Chicago.
Charles R. Bardeen, dean, University of Wisconsin Medical School (representing the state university).
Charles C. Bass, dean, Tulane University of Louisiana School of Medicine, New Orleans.

A symposium, Tuesday, on the medical care of the American people, income and distribution of physicians, will be presented by the following speakers: Alphonse M. Schwitalia, S. J., dean, St. Louis University School of Medicine; Dr. Robin C. Buerki, superintendent, Wisconsin General Hospital; and Dr. Rav Lyman Wilbur, president, Stanford University, Calif. Dr. Fred A. Moss, Washington, D. C., will present a report of the committee on aptitude test, and the following speakers will also be included in the program:

Dr. Jennings C. Litzberg, Minneapolis, Administration of Internships.
Dr. Rufus Q. Goodwin, Oklahoma City, Administration of Clinical Clerkships.
Dr. Harold S. Diehl, Minneapolis, Demonstration of Student Health Activities in the University of Minnesota.
George R. Moon, Chicago, Relation of Certain Factors in the Student's Premedical Record to Success in Medical School.
Ida M. Cannon, chief, social service department, Massachusetts General Hospital, Social Case Teaching of Medical Students.
Drs. Reginald Fitz, Boston, and Maurice Pincoffs, Baltimore, Bedside Teaching of Medicine.
Dr. Frank S. Randles, Albany, N. Y., Study of Accomplishment of Students in High School College and Medical School.
Reuben M. Strong, Ph.D., Chicago, Problems of the Lowest Third of the Student Body.

MEXICO

One Hundredth Anniversary of Medical Faculty—The one hundredth anniversary of the founding of the Faculty of Medicine of the National University, Mexico City, will be celebrated in October. There will be a week of "Medical Days," October 23-28, during which lectures, clinics and laboratory demonstrations will be given in public and private hospitals. The committee in charge of the centenary celebration has invited the governments of several countries and the principal universities of the world to send representatives and is preparing a program of entertainment. Dr. Alfonso Pruneda, Avenida Brasil 33, Mexico D. F., is secretary of the committee.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 16, 1933

The State of the Public Health

The annual report of the chief medical officer of the ministry of health presents an examination of the effects of unemployment on the fitness of the nation. He points out that in estimating the effects of widespread unemployment on the physical features of the people a number of factors must be considered. In the first place there is the direct effect on the unemployed individual and his dependents, and in the second the indirect effect on the physical well being and even on the minds of the employed (through fear of unemployment or otherwise) and on the population generally, whether employed or unemployed. The harmful effect of unemployment may be exercised on its victim in various ways: (1) deprivation of an adequate diet, (2) the effect of idleness on a manual worker in rendering him unfit to resume his occupation owing to want of practice and loss of muscular tone, (3) the effect of worry in impairing bodily functions, (4) excessive sickness or incapacity. In these effects there is much that cannot be analyzed or tabulated. But the surest test of grave physical results is the mortality returns. Any long sustained physical pressure or stress of serious degree will ultimately be represented in a rise of mortality. In the face of protracted and gradually increasing unemployment until the present time the mortality of the country as a whole, with few exceptions, and even of the depressed areas themselves, has uniformly decreased. Nor is there any evidence of increased morbidity. The mortality rates for England and Wales in 1932 show the same steady and definite decline as has been observed since 1921. The total death rate in 1932 was the exceptionally low one of 12 per thousand. It has been steadily falling since 1871. The infantile mortality was also exceptionally low and only half that of 1901-1910. The deaths of children under 1 year of age began to decline in an extraordinary degree some twenty-five years ago and have continued to decline ever since, even in periods of economic depression. The great constitutional diseases have declined in the last ten years. Premature birth caused forty-seven per thousand deaths in 1923 and thirty-four in 1932. The corresponding figures for diseases of the nervous system are 107 and 84, for bronchitis and pneumonia, 149 and 113. There has been of course a corresponding increase in the proportional mortality of other diseases, but they furnish no evidence of physical deterioration.

The estimated midyear population of England and Wales in 1932 was 40,201,000. The natural increase of population in the last five years has fallen from about 200,000 in the first year of the period to 130,000 in 1932. The present rate is only 4.9 per thousand, compared with 14.5 in the period 1876-1880. As shown in a previous letter (July 15, p. 220) it is estimated that this fall will result in a cessation of increase of population in 1940, and after that in a decline. In 1932 the birth rate was the lowest on record. The five principal causes of death, with the proportion per thousand deaths, were: diseases of the heart and circulatory system, 264; cancer—malignant disease, 125; bronchitis, pneumonia and other respiratory diseases, 113; diseases of the nervous system, 84; all forms of tuberculosis, 69.

Food Adulteration

While the adulteration of food has gradually fallen during the last fifty years from 20 per cent of the samples taken for analysis to 5 per cent, a new problem of adulteration has arisen in the form of the scientific treatment of food by skilled chemists. As examples of a risk to health or debasement of nutritive value in commercial processes the following are cited:

(1) the fumigation of food with toxic gases to destroy insects, (2) the presence of heavy metals in foods derived from materials or containers used in their manufacture, (3) the increasing use of insecticides and fungicides in agriculture and horticulture, (4) the treatment of flour with bleaching and improving agents, (5) "fortification" of foods by addition of vitamins, (6) the uncontrolled exposure of food to ultraviolet rays, (7) the introduction of new synthetic colors and flavors. In connection with the last it is mentioned that the aroma of butter is produced by a culture of *Streptococcus cremoris*. The actual substance responsible for the odor has been identified as diacetyl. It can be manufactured artificially, and in aqueous solution is used to give aroma to butter deficient in this respect. But highly aromatic butter does not keep well and possibly the addition of synthetic diacetyl to butter to improve its aroma may defeat its own object by causing the butter prematurely to turn rancid.

Inquest Without a Body

What is believed to have been the first inquest in Ireland in the absence of the dead body was held at Gortahork, Donegal, in connection with the disappearance of Mr. A. Kingsley Porter, professor of fine arts at Harvard University. His wife stated that their married life was happy and that they had no financial or other worries. Her theory was that he must have slipped off a cliff and fallen into the water and been carried out to sea. Every effort to find him failed. A verdict of death by misadventure was returned. According to English law, which existed in Ireland up to the establishing of the Free State, the inquest is held on the body of the deceased and until recent years the coroner's jury was bound to view it.

Financing Hospitals by Sweepstakes

The financing of Irish hospitals by turning to account the gambling spirit of the world has been extraordinarily successful. Since the first sweepstake, in November, 1930, \$84,000,000 has been subscribed in nine sweepstakes. Of this, \$26,600,000 has been allotted to the hospitals and the remainder has been devoted to prizes, expenses and taxation by the Irish government. The money for the hospitals has been used not only for current expenses but also for reconstruction and improved equipment. Fifty hospitals made claims for medical, surgical and pathologic apparatus, for the repayment of loans and for endowment investments. It has been laid down as a principle in the administration of the funds accruing to the hospitals in these "fat" years of the sweepstakes that their managers must have an eye to the possibility of "lean" years and therefore establish endowment funds. Fifty-three hospitals are now on the sweepstake list and it is stated that with wise investment for endowment purposes they may never again have to depend as they formerly did, on uncertain and haphazard incomes. This advice as to endowment certainly seems necessary, for there are not wanting indications that the flow of money from all parts of the earth, attracted by the large prizes offered, will not always continue. Some people have expressed the view that the millions of dollars obtained from England for the support of Irish hospitals should be devoted to her own hospitals and rival sweepstake schemes have been suggested, but so far nothing has been done. Such sweepstakes are illegal in England and there is a good deal of opposition, both on moral and also on prudential grounds, to hospitals being financed in this way.

Test of an Alleged Cancer Cure

Physicians are accused of prejudice because they will not give a trial to the so-called remedies for cancer constantly vaunted by persons entirely ignorant of medical science. But here is what happens when the government intervenes. A company known as the Roberts Clinics Pty. Ltd. was recently formed in Australia, according to the *Lancet* to exploit an alleged cure for cancer. As the result of a number of incidents

that followed, the government of Queensland appointed a medical committee to investigate its claims. People suffering from cancer who desired to submit themselves to the "cure" were called for. Of those who applied, thirty-seven were examined. Sixteen were rejected by the committee as unsuitable, some not being cases of cancer at all and others being too far advanced. Of the remaining twenty-one the proprietors of the "cure," Mr. Roberts, rejected eighteen—a rather damaging commentary on his claims. The remaining three were treated in a hospital specially staffed and equipped for the purpose by the home department. Into a large infiltrating tumor of the face Roberts injected a fluid, some of which ran over the cheek and produced a burn of the second degree. In the opinion of the committee the condition of the tumor was made worse, the malignancy becoming more active. In a case of cancer of the rectum in a woman, an abscess was produced and she abandoned the treatment. A case of cancer of the stomach was treated by injecting some dilute acid through a stomach tube. No improvement followed and death occurred soon afterward. So much for the three cases. The report of the committee refers to the ignorance of the claimant of the simple facts of medicine and chemistry and criticizes the facility with which such a person can float a company and commercialize the treatment of such a disease as cancer.

PARIS

(From Our Regular Correspondent)

Aug. 23, 1933

Study of the Epidemiology of Syphilis

The regular session of the dermatologic convention at Strasbourg was devoted this year, to the study of the epidemiology of syphilis. It is interesting to compare opinions, since the regulation of the cities differs widely. Depending on the will of the mayor, prostitution is either unrestrained or is restricted to resorts under medical supervision. It is difficult to form a true opinion of the actual conditions. It appears that the closing of brothels in some cities by the mayors has no influence on the increase or decrease of cases of syphilis. The authorities are therefore undecided as to what course to take. When prostitution is unrestricted, venereal diseases, in the absence of medical supervision, develop unchecked. When prostitution is supervised by the authorities, clandestine prostitution increases, and this form is the most dangerous, for it is practiced in cafes and hotels. Such is the conclusion formulated by Dr. Carl of Lyons. In that city, J. Gate and P. I. Michel ascribe the increase of syphilis to the fact that one finds there more and more arsenoresistant persons. In Bordeaux, G. Mettges and P. Julia observed a diminution of syphilis, which they attributed to the work of the prophylactic centers. In their opinion, clandestine prostitution is much more dangerous than supervised prostitution. Medical supervision is necessary in a large city, especially in an ocean port. T. Thorel reported an increase in syphilis at Havre as well as distinct variations in its virulence, which, he noted, coincided with the virulence of other infections, such as typhoid. The parallelism in these curves of virulence, which is difficult to explain, deserves more intensive study. At Rouen, according to Mr. Payenneville, the curve of syphilis is frankly in inverse relation to the application of prophylactic measures. J. Benesch and A. Spillmann observed that unemployment increases clandestine prostitution and favors the development of venereal diseases. Among women out of employment who turn to prostitution one finds a large number who are carriers of spirochetes without their having ever worried over the fact, whereas professional prostitutes are better acquainted with the dangers. At Marseilles, Cauguon and P. Vigon had observed a frank diminution of syphilis up to 1932, since which time a

sudden increase amounting to 23 per cent has been noted, which fact they attribute to unemployment among women and to a neglect of treatment among men. At Strasbourg, where all brothels have been closed, in accordance with the decision of a communist mayor, Goubelle has not observed any increase of syphilis in the military population over which he has supervision, although it is true that the supervision has been more strict. In the French army, an infected soldier is compelled, on pain of punishment, to report the name of the woman who infected him, and that woman is immediately sought out by the police and forced to accept dispensary treatment. Most of the conventionists were of the opinion that this method should be made compulsory by suitable legislation. Parliament, however, has never consented to pass such a law for fear of trespassing on personal liberty. But that excuse is mere sophistry. The liberty of spreading a harmful malady among the social body should yield to higher considerations. Mr Kissmeyer of Copenhagen reported that syphilis is decreasing in Denmark, where the treatment of syphilis is compulsory and gratuitous. Mr Charles Laurent had noted an appreciable diminution of syphilis in the department of Loire and attributed it to the excellent organization of the police department and the dispensaries. Mr Bertin of Lille emphasized the gravity of syphilis of nonvenereal origin, which is often overlooked. Mr Lepinav reported the continued increase of syphilis in Morocco, and Mr Touraine had made the same observation in the French colonies of Africa, Asia and Oceania where the infection is due to native troops and to foreign laborers. He mentioned regions that had been exempt but in which the disease, imported usually by colonists, is now developing rapidly, being frequently communicated to transient seamen. Esquier and Chevalier reported an aggravation of syphilis in the maritime sections of Toulon where one observes they stated a new syphilitic every two days in the population of 40,000. The prophylactic ointments recommended to the seamen have but slight value. Joulia, Bague and Leonard of Bordeaux called attention to the frequency of uterine chancre unrecognized in prostitutes. Bizard deplored the lack of laws with which to deal with prostitutes under age who owing to ignorance disseminate syphilis among young workmen of the suburbs of large cities.

Memorial—A Bust of Widal

To perpetuate the memory of Prof. Fernand Widal who died in 1929, former pupils have had erected a bust by the sculptor Landowsky in the clinic at the Cochin Hospital, where he gave the major part of his instruction and carried on his researches. Under the bust are engraved the titles of his principal works: "serodagnosis, cytodiagnosis, pathogenesis of edemas, azotemia, classification of nephritis, colloidoclasia." Imposing ceremonies were held at the dedication presided over by the minister of public health. Addresses were delivered by Professor Achard and Professor Bezançon, collaborators of Widal. Professor Lemierre, his most eminent pupil, and Dr Mourier, director of the Assistance publique in Paris.

Deaths

Dr Henry Thierry, honorary inspector of the hygienic services of the city of Paris, vice president of the Conseil d'hygiène et de salubrité of the department of the Seine and an active promoter of modernization of the municipal disinfection services, died of injuries received in an automobile accident at the age of 64.

Dr Paul Sollier, eminent psychiatrist, has died suddenly at the age of 70. A former pupil of Charcot, under whom he had served as head of the clinic at the Hôpital de la Salpêtrière, he had published some excellent articles on hysteria, systematized delirium and kindred subjects. He had founded an important sanatorium for mental patients near Paris.

BERLIN

(From Our Regular Correspondent)

Aug. 28, 1933

The Ethical Council of Physicians

In previous letters the project of establishing a federal ethical council of physicians was announced. The draft of the proposed legislation has been handed to the federal minister of the interior by Dr. Wagner, the federal director of the medical profession of Germany. The federal chamber of physicians, to be created on the basis of the federal ethical council of physicians, will be the only organization in which the German physicians will be associated for the fulfillment of their professional obligations. The result of this legislation will be that the previously existing independent professional leagues will be forced to disband. Within the federal chamber of physicians, some groups of physicians who have to perform certain tasks in public health administration, more particularly the panel physicians, will be brought together in more intimate association. An important step in this direction has been taken through the recent executive order of the federal minister of labor in regard to the creation of the *Kassenärztliche Vereinigung Deutschlands* (association of the panel physicians of Germany). All panel physicians must be members of this association, likewise, all physicians whose names are recorded in the federal register of physicians—that is to say, the physicians who have been admitted to panel practice. The constitution may provide for the admission of other physicians. The association will be under the supervision of the federal minister of labor. Thus this association becomes the clearing house of the relations of the panel physicians to the *Krankenkassen*. As a result, the Hartmann league has lost its character of an independent professional league and has been transformed into a body having to do with public rights.

The Physical Aspects of Thinking, Electrical Brain Currents

In connection with every nervous and muscular activity, there are developed so-called action currents. Professor Berger, psychiatrist of Jena, has been endeavoring to prove that similar bio-electric currents occur in the cerebrum. After years of research he has secured curves from the human cerebrum, not only from the intact cranium but also through trephined areas, which show that constant electrical fluctuations are associated with the activity of the cerebrum. These bio-electrical manifestations are absent in the new born and in the infant during the first weeks of life. There is no evidence of them until the child enters the sixth week of life and not until the child is four years old does the curve attain the form that it keeps throughout the child's life. This curve, Berger terms an *elektronkephalogramm*, of which there is an entirely distinct form for every person. It consists of long rather slowly moving waves (from 9 to 11 hertz per second) and short much more quickly moving waves.

This automatic cortical activity, as shown by these electric currents, continues during sleep but is interrupted during unconsciousness and in chloroform anesthesia. High long continued fever changes the *elektronkephalogramm* of every person. In mental disease associated with dementia the waves are greatly changed. Also during every type of mental work and under the influence of sensory stimuli to which the attention is directed the *elektronkephalogramm* undergoes characteristic changes. The long waves of the *elektronkephalogramm* then suddenly disappear and at the same time the shorter waves appear more distinctly. This is probably due to a blocking of the course of the automatic cortical processes. Probably this general blocking is associated with the local stimulation process in the corresponding sensory center. Berger calls this *block*.

festation a graphic representation of the "narrowing of consciousness" as used in psychology

From the relation of the "elektrenkephalogramm" to psychic processes, Berger draws some interesting deductions

Josef Berze of Vienna divides the cortex of the cerebrum into two areas. In the external area, which comprises the first three cortical layers, the material processes that are in any wise associated with psychic activity take place. Here, according to Berze, there is no localization of definite psychic and physical performances. He terms this external layer the "intentional" sphere. Beneath it are the fourth, fifth and sixth cortical layers, which comprise the "impressionist" sphere, with strict localization. Corresponding to all psychophysical processes there are physiologic processes in the intentional sphere, and the various psychic performances are brought about through the action of this uniform psychophysical process occurring in the upper cortical layers on the material made ready by the impressionist sphere. The 'elektrenkephalogramm' is, then, to be regarded as the accompanying manifestation of the uniform psychophysical activity taking place in the intentional sphere.

Open-Air Schools

The creation of open-air schools has progressed in Germany. These schools have been established chiefly for weakly children, later, forest schools for healthy children arose. Some of the hygienic advantages of the open air school, as observed and reported by the Krankenkassen, were disappearance of glandular swellings and anemia, tanning of the skin, increase of weight, increase of bodily vigor and improvement in physical appearance, lessened tendency to colds, increase of resistance and of general well being, and strengthening of the nervous system. The work in the open-air schools seeks to inculcate a fondness for a simple, natural and healthy mode of living, independence of action and self-reliance. In addition to the hygienic advantages, their importance lies, therefore, in the attainment of an education that will make for a thrifty, financially sound mode of living in family and state.

Nutrition and Mortality

Since the close of the World War, the monthly distribution of deaths in Germany and in other countries that participated in the war has undergone a change. In the spring months (February to May) the mortality curve rises far above the average, whereas in the fall months it lies correspondingly below the middle values. The mortality peak that existed before the war in December and January could be ascribed to climatic influences, and that in August, during the last decade of the previous century, was assignable to digestive disturbances in children, but the cause of the recent spring peak, according to Dr. von Hahn in addressing the medical society of Hamburg is the lack of vitamins in the diet. The vitamin theory, he pointed out, has proved two contentions beyond all doubt: (1) All forms of vitamin deficiency reduce the degree of immunity and thus increase the tendency to infection, and (2) in the German diet in spring there is a vitamin deficiency. These two experimental facts taken together furnish the reason for the spring peak in question. That nutrition is a causal factor is according to von Hahn, shown by the fact that inhabitants of the same area with different types of diet (inhabitants of agriculturally poor and agriculturally rich regions, inhabitants of sections of the cities with rich or poor residents, single persons and married persons) present widely different spring maximums of mortality, and always in the sense that the portion of the population with the diet poorer in vitamins shows a higher spring mortality. In arranging the deaths according to causes of death one finds that the spring maximum affects chiefly the infectious diseases which may be explained by the reduction in immunity, and in tuberculosis especially, in which the value of vitamins for recovery has been well established.

ITALY

(From Our Regular Correspondent)

July 31, 1933

Italian League for the Combating of Cancer

The third national convention of the Lega italiana per la lotta contro il cancro has been held in Rome, and on that occasion the new "Regina Elena" Institute erected in proximity to the Policlinico, was dedicated. The convention was presided over by Prof. Roberto Alessandri. The queen was present at the dedication.

THE CRUSADE AGAINST CANCER

The first topic, "The Organization of the Crusade Against Cancer," was presented by Prof. Arcangelo Aliverto, assistant director of the public health service. He discussed the limits within which prophylaxis can be effective, especially in the field of precancerous lesions, in cases of hereditary predisposition and of lesions due to occupational causes. For occupational cancers (due to tar, pitch, aniline dyes and roentgen rays), notification should be made compulsory. The organization of the crusade against cancer should be based mainly on a wide publicity campaign and on the training of medical specialists. Histopathologic research is necessary for the purposes of early diagnosis, but, owing to the difficulties it presents, it should be entrusted to well equipped university laboratories. An annual mortality of about 13,000 persons is to be regarded as the basic figure for the therapeutic organization in Italy. After surveying the work accomplished by the centers in Milan, Turin and Bologna, Professor Aliverto suggested that a chapter of the league be established in every province and that anti-cancer centers be created in the university cities or in the large hospitals, which would offer services for early diagnosis and surgical interventions, or application of physical agents. The two cancer institutes that are functioning at present in Italy provide in addition to the aforementioned purposes, systematic research to determine the etiology of malignant tumors and suitable methods for curative treatment.

During the discussion Professor Gaifami endorsed the need of centralization for the surgical treatment of malignant tumors. Salotti emphasized the need of centralizing the radiologic means of treatment, as they should be employed only by those who are competent. Senator Bastianelli opposed the idea of excessive specialization. He believes it would be better to increase the knowledge and the capacity of a large group of physicians and a large group of institutions in order that research may be carried on with greater facility and at a minimal expense.

PRECANCEROUS LESIONS

The second topic, "Precancerous Lesions" was developed by Professor Sotti of Rome who brought out the difficulties in endeavoring to define a 'precancerous lesion'. The histologic examination is often inadequate to establish the nature of the cancerigenic cell and must be supplemented by the biologic examination. At present it is not possible to state whether a cell or a group of cells is being transformed into cancer. Hence the term 'precancerous' does not refer to a change that is well established but to a complex of changes neither constant nor characteristic. Sometimes these changes occur in embryonal elements that have remained undifferentiated or unutilized in other manifestations there is evidence of regeneration, metaplasia, chronic inflammation or cicatricial tissues. In other cases there are signs of preceding lesions of which the cause and the nature are not easily determined. To this group belong benign tumors.

In the discussion, Fabris emphasized the frequency of primary tumors of the lung and called attention to the importance of cicatrizing inflammation of the lung as a potentially precancerous stage. Cappelli described precancerous lesions of the

skin. These lesions should be destroyed, being subjected to a radical radiologic treatment in the same manner as true cancer. Gaifami called attention to the influence of pregnancy in predisposing the cervix to cancer.

Benedetti of Bologna discussed the frequency of the transformation of gastric ulcer into cancer. He stated that duodenal cancer is rare, whereas duodenal ulcer is frequent, cancer in persons operated on for ulcer by gastroenterostomy is very rare. Hence ulcer must not be a frequent disorder preceding cancer. Zoia, Alessandri and Morpurgo were of the same opinion.

TREATMENT OF CANCER OF TONGUE

Professors Alessandri and Busi of Rome discussed "Surgical and Radium Treatment of Cancer of Tongue." Alessandri brought out that, in order to evaluate the results of surgical treatment, it is necessary to note the extension of the lesion, the anatomopathologic and the clinical type of the tumor, and its site. In determining which are operable cases, greater care is observed than formerly, the conception of operability being confined to cases that do not widely invade the tongue and adjacent regions and that present the possibility of complete removal by the oral route (sometimes enlarged). If there are glandular metastases, they must be limited to the submental or submaxillary glands. It is well known that the two fundamental types of tumor of the tongue, the spinocellular and the basocellular, vary as to malignancy. The latter is less malignant but also less frequent than the first. A more extensive use of biopsy is to be recommended.

The results of surgical removal of cancer of the tongue are not brilliant at the best. An improvement in the results could be secured with a proper collaboration of radiology and surgery, either by removing the glands and treating the tumor with radium or by removing glands and tumors, with radium treatment before and after.

Pacetto divided cancer of the tongue into cancers with (1) surgical indications, (2) variable indications, (3) radium therapeutic indications, and (4) mixed indications. Comparing the results of treatment of Professor Alessandri's cases with those in a series of cases treated in the Curie Institute, the speaker concluded that no evident superiority of radium treatment over surgical treatment has yet been demonstrated with reference to the forms of the first and second degree, whereas for the tumors of the third and fourth degree it is advisable to combine adenectomy with radium therapy.

Professor Santoro divided radium treatment into two phases: lingual localization and localization in the lymphatic regions. For the lingual localization the technic can be said to be standardized, for almost every one employs interstitial irradiation. With reference to glandular metastasis, opinions differ. The speaker uses external radium irradiation of the lymphatic regions, employing the heaviest dose compatible with the integrity of the healthy tissues. With this technic he has treated, during the past five years, sixty patients, effecting a clinical recovery in 30 per cent.

RADIUM THERAPY IN CANCER OF THE UTERUS

Professor Bertolotti discussed the fourth topic, Radium Therapy in Cancer of Uterus. To aid in the early diagnosis of uterine cancer, it is indispensable to make more widespread the system of periodic medical examinations. Radium constitutes one of the most effective means of treating uterine cancer and in some cases gives results superior to hysterectomy. In the more advanced forms intracavitary radium therapy should be combined with roentgen therapy.

BIOLOGIC TESTS IN THE DIAGNOSIS OF CANCER

The fifth topic, Biologic Tests in the Diagnosis of Cancer, was considered by Professor Brancati of Parma, who said that not one of the large number of tests in use gives absolutely

specific results. Many tests are, however, valuable, especially for neoplasms of the internal organs, and some have the advantage of ease of application. In each case the physician must coordinate in a proper manner the clinical and the biologic data, in order to formulate a true diagnosis.

LIPIDS AND TUMORS

The sixth topic, "Lipids and Tumors," was discussed by Professor Morelli of Florence, who emphasized that research on this complex subject has shown the primary importance of lipid substances in the phenomena of cellular growth in general and in neoplastic cellular growth in particular.

BUENOS AIRES

(From Our Regular Correspondent)

June 21, 1933

A Series of Lectures on the Hypophysis

Dr Houssay, director of the Instituto de Fisiologia of the Faculty of Medicine of Buenos Aires, recently delivered a series of lectures before the Academia de Medicina of Buenos Aires. In the first lecture he spoke on the relations between the hypophysis and carbohydrate metabolism. The known functions of the anterior lobe of the hypophysis may be considered at present as belonging to four main groups: growth, sex and reproductive activities, the development and maintenance of other endocrine functions, and the metabolism of carbohydrates. The principal functions of the hypophysis are related to the metabolism of the carbohydrates, the other functions are more or less associated with it. The anterior lobe of the hypophysis contributes to the consumption of sugar, its action is antagonistic to that of insulin. Ablation of the anterior lobe of the hypophysis facilitates the hypoglycemic action of fasting and insulin and its ultimate result is the death of the animal. Hyperglycemia-producing factors have a less effective action on animals deprived of the anterior lobe of the hypophysis than on normal animals. The fact that hypoglycemic crises occur sometimes in animals deprived of the hypophysis and of the pancreas indicates that the crises are independent of insulin secretion. Not only is compensation for all the results of pituitary extirpation effected by the implantation of the anterior lobe or by the injection of its alkaline extract but even opposite effects are brought about. In toads deprived of the hypophysis and pancreas, the injection of extract of the anterior lobe of the hypophysis produces its diabetogenic action regardless of the presence or absence of telencephalon, mesencephalon, diencephalon (including the tuber cinereum), the thyroid, the sex glands, kidney, lungs and digestive tract but this action is not produced when the animals are deprived of the liver. Hypophysectomy in toads causes a decrease of the liver and muscle glycogen and of the phosphocreatinine. The animals show asthenia and sometimes convulsions and die. All the symptoms disappear and survival of the animals is assured by the implantation of the anterior lobe of the hypophysis. The implantation of the posterior lobe of the hypophysis has a less effective action. The injection of high doses of alkaline extract of the anterior lobe of the hypophysis repeated during three or four days causes hyperglycemia, glycosuria and ketonuria in normal dogs. The intravenous injection of dextrose in dogs under these conditions produces a prolonged hyperglycemic curve and the respiratory quotient increases only a little or not at all. Both normal and hypophysectomized animals injected with the alkaline extract of the anterior lobe of the hypophysis show a high resistance to insulin and present increased hyperglycemic reactions to epinephrine and morphine. All the changes characteristic of pituitary insufficiency are counterbalanced by the administration of the extract: the hypersensitivity to insulin and phlorhizin disappears, the glycosuria and ketonuria pro-

duced by phlorhizin in hypophysectomized dogs increase and a condition of intense diabetes is induced in dogs simultaneously deprived of the pancreas and of the hypophysis with little or no glycosuria before the injections. The hypophysis plays a leading part in carbohydrate metabolism and is followed in importance only by the liver and the pancreas. To speak of a diabetogenic hormone is incorrect, because the production of diabetes is not a normal function of the hypophysis. Therefore it may be said that the extract of the anterior lobe of the hypophysis in high doses has a diabetogenic action and that probably the hypophysis is responsible for the hyperglycemia and glycosuria often present in cases of acromegaly. The same contra-insulin hormone is also inadequate, because its action is produced even on animals deprived of the pancreas independently of any pancreatic influence. According to Houssay, when the mass of facts studied by him and his collaborators is verified in other laboratories, it will be impossible to speak of the hypophysis without considering its metabolic role, or to consider the carbohydrate metabolism without mentioning the hypophysis.

THE HYPOPHYSIS AND THE ENDOCRINE GLANDS

In his second lecture Dr Houssay showed that hypophysectomy in dogs is followed by either lack of development or atrophy of such endocrine glands as the gonads, the thyroid, the parathyroids, the suprarenals and the thymus. The anterior lobe of the hypophysis is necessary for the development and maintenance of the endocrine glands. It is doubtful whether the hypophysis secretes a specific stimulating hormone for each gland. It is more probable that there is a general hypophyseal action, to which is added the effects of certain specific hormones. Hypophysectomy produces atrophy of the thyroid epithelium. The epithelial cells become small and flattened and have small nuclei. The thyroid alveoli are wide and their colloidal content is dense, well stainable and without vacuoles. The iodine percentage of the thyroid increases. Iodemia arises at first followed by an initial period of hyperthyroidism and then it declines. After extensive ablation of the thyroid there is no compensatory hypertrophy. The basal metabolism, as a rule, is 15 per cent below normal and it becomes 25 per cent below normal if the thyroid is removed. In dogs already deprived of the thyroid, hypophysectomy does not lower the basal metabolism. The blood plasma of dogs deprived of the hypophysis shows changes characteristic of hyperthyroidism especially an increase in the globulin content and in viscosity. The extract of the anterior lobe of the hypophysis has the same effects as the administration of thyroid (except in dogs deprived of the thyroid). It produces hypertrophy, hyperplasia and hyperfunction of the thyroid. The epithelial cells of the thyroid become enlarged, the colloidal content becomes vacuolated (it is reabsorbed), the thyroid iodine falls and the blood iodine rises, the basal metabolism rises greatly, and the pulse and the respiration increase. In the rat and guinea-pig the sensitivity to anoxemia increases (as if thyroid extract were given to them) but not if the animals are previously deprived of the thyroid. The hypophysis has an action of stimulation on the thyroid. In dogs deprived of the hypophysis as well as in those deprived of the pancreas atrophy of the parathyroid is observed in 66 per cent of the animals. These atrophic parathyroid lesions are constant and intense in dogs simultaneously deprived of both the hypophysis and the pancreas. The atrophy of the thymus, following hypophysectomy, observed in dogs by Ascoli and Legnani in 1912, and by Houssay in 1916 was also observed in rats by Smith in 1930.

RELATION BETWEEN HYPOPHYSIS AND SUPRARENALS

Dr Houssay, in the third lecture of the series June 22 discussed the relation between the hypophysis and the suprarenals. In dogs deprived of the hypophysis the weight of the supra-

renals diminishes 38 per cent of their normal weight. The atrophy occurs in the reticular zone and progresses from the inside to the outside, invading the fascicular zone. The glomerular layer is either normal or becomes hypertrophic. The atrophy is either simple or with vacuolar degeneration. The fats are more densely stained and the fat droplets are larger than normal. The medullary part is intact and the total amount of epinephrine does not vary, but because of the atrophy of the cortical layer the total amount of epinephrine per gram of weight of the gland is larger than normal. The extract of the anterior lobe of the hypophysis, on the contrary, produces a marked hypertrophy of the suprarenal cortex, the medullary part shows a slight decrease of epinephrine. In human hypopituitarism there is atrophy of the suprarenal cortex and probably suprarenal hypofunction as well. In hyperpituitarism there is hypertrophy of the suprarenal cortex.

Undulant Fever in Argentina

Investigations carried on by Dr J. M. de la Barrera at the Instituto Bacteriologico of the National Department of Hygiene of Buenos Aires showed some species of *Alcaligenes* present in Argentina. In the western region of Argentina from the Neuquen to the northern border, *Alcaligenes melitensis* is the only species found. In the goat raising regions and in the region of the littoral, *Alcaligenes suis* is the only species found. In the cattle and horse raising regions, where no goats are raised *Alcaligenes abortus* is the most commonly found species.

Marriages

- FRANK SAUNDERS HUNDLEY, Baltimore, to Miss Margaret Adreon Smith of Jarrettsville, Md., at Westminster, June 7.
ROBERT PRESTON HAWKINS, JR., Clifton Forge, Va., to Miss Grace Vernon Reynolds of University, June 9.
CHARLES FREDERICK LE COMTE, Portland Ore., to Miss Mary McNeil Darling of Milwaukee, August 12.
GEORGE M. DAWSON, West Palm Beach, Fla., to Miss Louise King of Maysville, S. C., August 26.
RUSSELL FELTS HUFFORD, Welch, W. Va., to Miss Mayme Eleanor Knight of Richmond, Va., June 17.
CHARLES HUBBARD CORNISH, Maplewood, N. J., to Miss Dorothy Elise Rand of New York, July 8.
GARLAND NORFLEET CARTER, Boynton, Va., to Miss Susan Elizabeth Carpenter of Richmond, June 24.
JOHN WESLEY HOCKER, Chattanooga, Tenn., to Miss Glenna Burke Strickland of New York, June 24.
CHARLES A. CARROLL, Manchester, Iowa, to Miss Marjorie L. Petrovitsky of Cedar Rapids, July 1.
BERNARD CANDLER GRIGSBY, Lebanon, Va., to Miss Mary Helen McKissick of Wellville, July 12.
CHARLES MARSDEN IRVIN, Roanoke, Va., to Miss Ruby Newman Hammer of Elkton, June 1.
JOHN L. WINSTEAD, to Miss Margaret Fleming, both of Greenville, N. C., September 16.
GLENN J. ANDERSON, Winterset, Iowa, to Dr. EVELYN M. OLSON of Iowa City, July 12.
FREDERICK THOMAS AMISS, to Miss Ruth Ann Broyles, both of Luray, Va., June 17.
KENNETH J. CHADWELL, Lynn, Mass., to Dr. LAURA V. TOWSE of Brighton, July 5.
EVERSON B. DAWSON, Fort Dodge, Iowa, to Miss Pauline M. Breen of Boone, July 23.
HENRY C. SAULS, Atlanta, Ga., to Miss Elizabeth Moseley of McDonough, August 19.
JOSEPH E. DVORAK, to Miss Louise Radschlag, both of Sioux City, Iowa, July 1.
JOE FRANK ADCOCK, to Mrs. Annette Haney, both of Sanger, Texas, recently.
EDGAR E. DUNCAN, to Miss Carolyn Barron, both of Seattle, September 9.

Deaths

Arthur Mills Corwin * Chicago, Rush Medical College Chicago 1890, at one time demonstrator of physical diagnosis at his alma mater and professor of physical diagnosis, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, associate professor of otology rhinology and laryngology Chicago College of Medicine and Surgery and the Bennett Medical College fellow of the American College of Surgeons, aged 69 on the staffs of the Chicago Eye, Ear, Nose and Throat Hospital and the West Suburban Hospital, Oak Park, Ill., where he died, September 9, of chronic nephritis, uremia and myocarditis

John Francis Ranken * Brooklyn, New York Homeopathic Medical College and Hospital, 1901 fellow of the American College of Surgeons, at one time adjunct professor of surgery, New York Medical College and Hospital for Women served during the World War, aged 58, on the staffs of the Jamaica Hospital, Richmond Hill, Huntington (N Y) Hospital Brooklyn Nursery and Infants' Hospital, Cumberland Hospital and the Carson C Peck Memorial Hospital, where he died, September 16 of heart disease

Karl Ohnesorg * Medical Inspector, Commander U S Navy, Carmel Calif., University of Pennsylvania School of Medicine, Philadelphia 1895 entered the navy in 1900 and retired in 1922 for incapacity resulting from an incident of service, fellow of the American College of Surgeons, aged 59, died, May 11 in the U S Naval Hospital Mare Island, of arteriosclerosis and ethmoidal sinusitis

Eugene Bruce Eastman * Portsmouth N H McGill University Faculty of Medicine, Montreal Que, Canada, 1902 member of the Massachusetts Medical Society and the New England Surgical Society fellow of the American College of Surgeons, for many years on the staff of the Portsmouth Hospital, aged 56 died September 6, of hypertensive heart disease and chronic nephritis

Fletcher Reese Harris, Henderson N C, University of Virginia Department of Medicine Charlottesville 1881, an Affiliate Fellow of the American Medical Association, past president of the Vance County Medical Society, county health officer, at one time member of the state board of health, aged 73, died, August 27, of chronic nephritis.

Richard W Jones * Wausau Wis Northwestern University Medical School, Chicago 1902 fellow of the American College of Surgeons veteran of the Spanish-American and World wars, aged 54, on the staffs of the Wausau Memorial Hospital and St Mary's Hospital, where he died, August 17, while performing an operation

James Dawkins Cromer, Atlanta Ga., University of Nashville (Tenn) Medical Department 1894, member of the Medical Association of Georgia, veteran of the Spanish-American and World wars, aged 65 died August 31, in the Emory University Hospital of coronary occlusion

Louis O Nordstrom * Salina, Kan College of Physicians and Surgeons Medical Department Kansas City University, 1902, president and formerly secretary of the Saline County Medical Society, on the staff of St John's Hospital, aged 57, died May 28, of septicemia

George M Preston * Lynchburg, Va University of Virginia Department of Medicine Charlottesville 1878 fellow of the American College of Surgeons president of the staff of the Marshall Lodge Memorial Hospital aged 77 died, July 3, of angina pectoris

James Locke Perkins * Cranford N J Yale University School of Medicine New Haven Conn 1898 fellow of the American College of Surgeons, aged 56 on the staff of St Elizabeth's Hospital Elizabeth where he died August 15 of carcinoma of the stomach

John M Manning, Durham N C Bellevue Hospital Medical College New York 1882 member of the Medical Society of the State of North Carolina for many years mayor of Durham aged 76 died August 30 in Chapel Hill of chronic nephritis

Robert Wales Prentiss, Middlebury Vt Baltimore Medical College 1901 member of the Vermont State Medical Society on the staff of the Porter Memorial Hospital aged 61, died May 30 of chronic myocarditis and acute dilatation of the heart

Luther M Holloway, Salona, Pa, Bellevue Hospital Medical College New York, 1868, member of the Medical Society of the State of Pennsylvania Civil War veteran, aged 88 was found dead August 7 of angina pectoris

Phineas A Renie, Union Ill Hahnemann Medical College and Hospital, Chicago 1891 member of the Illinois State Medical Society, aged 66, died August 18, as the result of injuries received in a fall several weeks ago

Frank Chiles, Honey Grove Texas, Louisville (Ky) Medical College, 1903 member of the State Medical Association of Texas aged 55 died suddenly, June 26, of heart disease while on a vacation trip near Antlers, Okla

Morton Marcellus Kent * Trenton, N J Medico-Chirurgical College of Philadelphia 1901 aged 53 medical director of the Chambersburg General Hospital, where he died August 23, of carcinoma of the intestine

S Rowland Hill, Lansing Mich, Michigan College of Medicine and Surgery, Detroit 1905, for many years health officer of Lansing aged 56, died, August 28, in the Receiving Hospital, Detroit, of heart disease

John W Leckie, Hamburg Pa, Hahnemann Medical College and Hospital of Philadelphia 1893 on the staff of the Hamburg State Sanatorium for Tuberculosis, aged 64, died, August 10, of cerebral thrombosis

Howard S Reeser, Reading Pa Jefferson Medical College of Philadelphia 1867 member of the Medical Society of the State of Pennsylvania, Civil War veteran, aged 87, died, August 12, of cerebral embolism

John William Rush, Bloomington, Texas Vanderbilt University School of Medicine, Nashville Tenn 1884 member of the State Medical Association of Texas, aged 74, died suddenly, July 18 of heart disease

Walter Ennis Hays * Sterling Colo Albany (N Y) Medical College, 1905, on the staff of St Benedict Hospital, aged 53, died July 3, in the Mercy Hospital, Denver, of empyema and lobar pneumonia

Theodore F Blanke, Garden City, Kan Homeopathic Medical College of Missouri, St Louis, 1889, member of the Kansas Medical Society, aged 72, died, May 11, in Joplin Mo of carcinoma of the face

Walter Peter MacGibbon, New York, Hahnemann Medical College and Hospital, Chicago 1898 aged 61 died August 6 in the New York Homeopathic Medical College and Flower Hospital, of a skull fracture

George Gurnee Esley, Sodus N Y, University of Rochester (N Y) School of Medicine, 1931, member of the Medical Society of the State of New York, aged 30, died, August 1, in an automobile accident

Solomon L Zeltner, Chicago Rush Medical College Chicago, 1895, member of the Illinois State Medical Society, aged 71, on the staff of St Mary of Nazareth, where he died, August 11, of heart block

Lauren Clay Thomas, Latrobe Pa College of Physicians and Surgeons Baltimore 1887 aged 73, died June 16 in the Johns Hopkins Hospital, Baltimore, of cerebral hemorrhage and chronic nephritis

Thomas Omar McSwain, Visalia, Calif College of Physicians and Surgeons of San Francisco 1899 member of the California Medical Association aged 71 died August 10, of cerebral hemorrhage

Joseph Charles Hormisdas Lortie, Ludlow, Mass School of Medicine and Surgery of Montreal, Que Canada 1892 aged 64, died, July 27, in the Mercy Hospital, Springfield, of uremia

Herman Evant Jones, Roanoke, Va, University of Virginia Department of Medicine Charlottesville 1886 aged 72 died August 17, in a local hospital of acute hepatitis and nephritis

Henry Clyde Telford, Ottawa Ill University of Michigan Homeopathic Medical School Ann Arbor 1905 aged 61 died June 22 in the Ryburn Hospital, of peritonitis and ruptured appendix

William Henry Emmons, Decorah Iowa Rush Medical College Chicago 1892 member of the Iowa State Medical Society, aged 65 died September 9 of coronary thrombosis

Thomas D McGlasson, Winslow Ind Louisville (Ky) Medical College 1884 for many years bank president aged 73 was found dead in bed August 16 of cerebral thrombosis

Wilson James Perry Billings, Mont Rush Medical College Chicago 1905 member of the Medical Association of Montana aged 56 died August 10 of myocarditis

Ira Clinton Somers, Chanute, Kan., University of the South Medical Department, Sewanee, Tenn., 1901, aged 76, died, July 7, of malignancy of the urinary bladder

Buford Kirkman Parrish, Mansfield, La., Tulane University of Louisiana School of Medicine, New Orleans, 1916, aged 47, died, August 25, of subdural hemorrhage

Julius Buzik, Chicago, Universitat Basel Medizinische Fakultät, Basel, Switzerland, 1915, aged 72, died, May 26, of coronary thrombosis and chronic myocarditis

Ernest H. Montcalm, New York, University of the City of New York Medical Department, 1892, aged 63, died, August 5, of coronary sclerosis and thrombosis

Thomas J. Wilson, Pomona, Calif., Memphis (Tenn.) Hospital Medical College, 1887, aged 76, died, July 12, of chronic myocarditis and tuberculous peritonitis

Harold L. Lown, Lansing, Mich., University of Michigan Homeopathic Medical School, Ann Arbor, 1904, aged 55, died, July 28, of hypertrophic cirrhosis of the liver

Horace G. Wootten, Clarksville, Texas, Dallas Medical College, 1904, aged 60, died May 6, in the Baylor Hospital, Dallas, of pneumonia, following an operation

John Joseph Carroll, San Francisco, John A. Creighton Medical College, Omaha, 1919, aged 37, died, July 21, in the Mary's Help Hospital, of cerebral sclerosis

John L. Ingram, St. Louis, American Medical College, St. Louis, 1884, Barnes Medical College, St. Louis, 1900, aged 72, died, August 15, of heart disease

Charles Clinton Ogle, Chambersburg, Pa., Hahnemann Medical College and Hospital of Philadelphia, 1905, aged 59, died, May 19, of arteriosclerosis

Alexander B. McTeer, Rockford, Tenn., University of Tennessee Medical Department, Nashville, 1884, aged 76, died August 12, of heart disease

George W. Law, Grand Rapids, Mich., Michigan College of Medicine, Detroit, 1882, aged 81, died suddenly, September 1, of heart disease

William Whipple McCormick, Spokane, Wash., Gross Medical College, Denver, 1888, aged 68, died, July 12, of a cerebral hemorrhage

John A. Whiting, Los Angeles, Detroit College of Medicine, 1887, aged 71, died, July 3, of chronic myocarditis and bronchopneumonia

Alvin McClung, Beverly, W. Va., College of Physicians and Surgeons, Baltimore, 1915, aged 43, died, May 13, of cardiac infarction

Robert Putnam, Brinkhaven, Ohio, University of Wooster Medical Department, Cleveland, 1872, aged 81, died, August 10, of prostatitis

John O. Taft, Minneapolis, Medical Department of Hamline University, Minneapolis, 1907, aged 54, died, August 29, of heart disease

J. Clinton Maxfield, Hettick, Ill., St. Louis College of Physicians and Surgeons, 1891, aged 72, died, August 12, of cardiac asthma

John Claude Potter, Frammingham, Mass., Baltimore Medical College, 1905, aged 54, died suddenly, July 30, of heart disease

Delbert L. Rose, Empire, Mich., Barnes Medical College, St. Louis, 1899, aged 59, died, September 1, of carcinoma of the prostate

Adolph H. Schonger, North Branch, N. Y., Pulte Medical College, Cincinnati, 1887, aged 70, died, May 27, of cerebral hemorrhage

Alden J. Woodruff, Watertown, N. Y., New York Homeopathic Medical College, 1885, aged 83, died July 6, of arteriosclerosis

Patrick George Alldredge, Fort Sumner, N. M., Atlanta (Ga.) Medical College, 1875, aged 80, died, July 16, of angina pectoris

Myron Cory Lyons, Winnetka, Ill., New York University Medical College, 1896, aged 73, died, August 13, of heart disease

Boyd Cornick, San Angelo, Texas, Hospital College of Medicine, Louisville, 1877, aged 77, died, July 4, of heart disease

Thomas W. Myers, Wichita, Kan., University Medical College of Kansas City, 1904, aged 53, died July 14

Luther Mathis, Fairview, Okla., Barnes Medical College, St. Louis, 1899, aged 61, died, July 19

Bureau of Investigation

THE "MODERN INSTITUTE" FRAUD

Another Quack Obesity Cure Debarred from the Mails

The Modern Institute, 381 Fourth Avenue, New York City, was incorporated in the fall of 1931 under the laws of the State of New York, with Charles G. Sinclair, president, and Miss Zita Leary, secretary and treasurer. The business consisted in selling through the United States mails a so-called Triple Action System for reducing persons suffering from obesity. Victims were obtained through advertisements published in magazines. A typical advertisement read in part:

LOSE FAT THREE TIMES AS FAST! Amazing New Triple Action System is GUARANTEED to Reduce You—as much as you want, wherever you want. NOW watch that fat vanish! See it fade away like magic. Now actually get rid of that excess weight. Take off as much as you please—in one third the time! You'll be slim before you know it! This amazing new way. You'll lose five to ten pounds almost overnight!

Combines THREE Famous Fat Reducers. Why waste time struggling to lose a few pounds when the amazing super system fairly makes excess fat melt away, with almost no effort on your part? Just use these three harmless, healthful preparations, follow simple directions and watch yourself grow slim!"

The three preparations referred to in the advertisement were further described as (1) "Triple-X Saline Salts," (2) "Triple-X Venus Cream," and (3) "Triple-X Baths." The obese public was urged to send \$1.95 for the "special introductory" treatment. Those who sent the money received a small package containing two cylindrical paper boxes about an inch and a half in diameter and four inches long, and a very small collapsible tube. One of the boxes contained the so-called Triple-X Saline Salts, the other the Triple-X Bath Tablets, while the collapsible tube held the Triple-X Venus Cream.

When these preparations were analyzed by chemists in the Food and Drug Administration of the Department of Agriculture, the Triple-X Saline Salts were found to contain tartaric and citric acids, soda, epsom salt and Rochelle salts. The Triple-X Bath Salts contained tartaric acid, soda and potassium phosphate. The Venus Cream was merely a vanishing cream with the odor of camphor.

The directions were to put one-half teaspoonful of the Triple-X Saline Salts in a glass of hot water which was to be drunk before breakfast. One of the Triple-X Bath Tablets was to be put in a bathtub containing water as hot as the victim could bear it, in which she was to remain fifteen minutes. The Triple-X Venus Cream was to be used as a massage cream.

The amount of material sent for \$1.95 was ridiculously small and shortly after the victim received it she got a circular letter explaining that she could not expect very much reduction from the small amount of material obtained in the introductory treatment. The main thing was to "keep up the treatment faithfully." The poor stylish stout was told "You must go on, for real, everlasting slimness is just around the corner." One would have thought that the phrase "just around the corner" would have been enough to arouse serious doubts of the efficacy of the treatment in the minds of those who have been through the economic depression. But apparently the suggestion that one should purchase "the complete, advanced course of treatment," containing a "giant-size supply" of the three preparations already mentioned, was followed by many, and eight dollars additional was sent in for more of the trash. The letter wheedling this money out of the victims was signed "Florence Kingsley," and subsequent follow-up circular matter was sent in an endeavor to induce a further purchase, the last letter of the series being what purported to be handwritten personal letter from the real or mythical Florence Kingsley herself.

While the advertisements told the prospective purchaser that the "system" made the "excess fat melt away with almost no effort on your part," the victim was told—after parting with her money—that she should take various exercises, many of which, according to expert medical testimony submitted by the government, would be dangerous to a great many people suffering from obesity. She was also urged to follow certain diets.

The whole thing was an obvious and patent swindle but it was necessary under the law for the government to go to con-

siderable trouble and expense in introducing medical testimony to prove that it was a swindle. On July 24 Judge Horace J. Donnelly, Acting Solicitor for the Post Office Department, recommended the issuance of a fraud order closing the mails to the Modern Institute, Inc., Modern Institute and Florence Kingsley. Postmaster-General Farley issued such an order on the same date.

Correspondence

ROCKY MOUNTAIN SPOTTED FEVER

To the Editor—The following quotation is from an editorial on Rocky Mountain spotted fever which appeared in *THE JOURNAL*, August 19. The following comments are made as a reply to the statements made in the editorial:

A much neglected phase of this problem has been revived by the work of Zinsser and Ruiz Castaneda on Mexican typhus, a disease that seems quite closely related to Rocky Mountain spotted fever. These workers produced a highly protective serum for the guinea pig by immunizing a horse to a phenolized suspension of *Rickettsia* obtained from infected rats previously irradiated with x-rays.

The early immune serum studies of Ricketts and Gomez and of Hememann and Moore and the later ones of Noguchi are then referred to, and the editorial goes on as follows:

Despite these encouraging experimental results there has been no further report of an attempt to increase the potency of immune serum against Rocky Mountain spotted fever and there has been no recorded example of the use of the serum in the prophylaxis and treatment of the disease in man. This is indeed surprising in view of the need of such a serum. An immune serum would be of unquestioned value as a prophylactic measure in persons who have been bitten in localities known to harbor ticks infected with highly virulent strains of *Rickettsia*. It would be especially indicated in those cases in which the ticks have been found attached in an engorged state since it has been shown by Spencer and Parker that infection is most likely to occur after the tick has remained attached to the host for a number of hours and allowed to engorge fully. In light of the available experimental data the use of the serum in the treatment of the disease is still of doubtful value. However since the serum is known to possess definite neutralizing powers beneficial results may probably be obtained if the serum is administered very early in the course of the disease in man. Further investigations on this phase of the problem are much needed.

As regards published data concerning serum prophylaxis and serum therapy of Rocky Mountain spotted fever the writer of the editorial was justified in his use of the phrase describing serum prophylaxis as "a much neglected phase of this problem." As a matter of fact however, considerable experimental work along the line indicated has been performed at the Hamilton Laboratory and elsewhere the past decade.

In case of an impending infection, the probable value of the prophylactic use of convalescent serum or of hyperimmune rabbit serum, such as that of Noguchi has been recognized for many years. It has however been felt that except under unusual conditions, there is very little field for its use. Most persons who are exposed to possible infection by tick bite are bitten so frequently that the use of such a serum is not practical on account of the relatively short duration of the passive protection conferred and the consequent need of repeated serum injections. At one time it was thought that such serum would be of considerable value to laboratory workers. This has not proved true at Hamilton, however. Most of those who are engaged in spotted fever research work make use of the Public Health Service preventive vaccine and furthermore most laboratory infections have been acquired without any suspicion of the fact on the part of the person concerned. There is a possible limited use for such serum among persons who are bitten by ticks at rare intervals but since the chance of infection is usually less than and seldom greater than one in fifty it would be only the occasional person who would become sufficiently alarmed to desire a protective injection of serum.

Regarding serum therapy both Surgeon R. R. Spencer working at the National Institute of Health and Noguchi at the

Rockefeller Institute were unable to produce a horse serum of definite value. Their results were never published. The most interesting experimental results at the Hamilton Laboratory have been secured with serums from goats that have been injected with repeated large quantities of highly potent tick virus—a much more potent inoculum than the blood virus used by Ricketts and his associates and by Noguchi. In connection with these studies, a herd of more than twenty goats is being maintained at this laboratory. Occasional goats produce a serum of sufficient potency that 1 cc given on the first or second day of fever will insure 100 per cent recovery among guinea-pigs and monkeys. There is a marked lessening of the degree of scrotal involvement but a less evident effect on the thermal curve. In one such series of tests of more than 400 treated guinea-pigs and two monkeys, all recovered, while all control animals died. The results have not been consistent however. A serum to be of practical value for treatment must not only be sufficiently potent to be effective when administered in a reasonable quantity but also must have definite therapeutic value when given on at least the third or fourth day after onset. The latter point is essential, since in the Rocky Mountain region at least, the majority of patients do not report for treatment until they have been ill for several days. Experimental attempts to produce and concentrate a therapeutic serum constitute one of the main phases of the research work at this laboratory at the present time and is being pushed as fast as is permitted by the necessary curtailment of government expenditures.

Convalescent serum has been repeatedly used by local physicians in the treatment of the highly fatal type of the disease that prevails in parts of western Montana and certain other sections of the Rocky Mountain region. It has perhaps been most extensively tried out by Dr. Herbert Hayward of Hamilton, special consultant of the service. There have been no results of value, except perhaps in a single instance when the blood employed was transfused from a patient recovered less than two weeks. Blood from the same donor subsequently failed to affect the course of infection in several patients favorably, and in at least one instance it was very possible that the administration was deleterious.

R. R. PARKER, PH.D., Hamilton, Mont.
Special Expert in Charge

TOXICITY OF DINITROPHENOL

To the Editor—It was to be expected following the article on the 'Actions and Uses of Dinitrophenol' by Drs. Cutting, Mehrtens and Tainter (*THE JOURNAL*, July 15) and general newspaper and magazine comment throughout the country, that it would attract a great deal of public interest and inquiry as to its therapeutic application.

A university professor who is much overweight and who had been on a great many reducing diets with indifferent results, consulted me with the purpose in mind of using this drug. The dangers of the drug were pointed out to him and he read the article in *THE JOURNAL* and the editorial comment in the same issue carefully but still evinced a strong desire to use this substance. He stated that he realized the possibility of body damage and our present incomplete knowledge of the pharmacology of the drug but in a spirit of heroism () he was willing to offer his body as an experiment to medical science. And so we proceeded with the use of this drug. He weighed 263 pounds (119 kg.) is 6 feet (183 cm.) tall and his age is 39. He was given 3 mg. per kilogram of body weight daily in the form of a capsule. He was told to report to me daily as to the effect of the drug on temperature, pulse rate, presence or absence of sweating, nervousness and its effect on his appetite. Until three days had elapsed no ill to

ward symptoms had arisen. On the fourth day he complained of a feeling of heat, he perspired profusely, he complained of pain in the buttocks and down the legs, he felt fatigued toward the end of the day, his appetite had increased, and he had an uncomfortable feeling in the abdomen. Examination revealed injected conjunctiva, with a definite icteric tint to the eyeballs. Beads of perspiration were on his forehead, his pulse rate had increased from 60 to 90, there was a lowering of blood pressure from 125 systolic to 112 systolic, his abdomen was sensitive, particularly over the liver area, the urine showed a trace of bile and a slight trace of sugar. He was advised to stop the use of the drug immediately and four days later when he was reexamined he was feeling well again. The icterus had disappeared, the pulse rate was normal, there was no more excessive sweating, and the pain in the buttocks and abdomen had disappeared.

I am writing this communication because it is of interest that, despite the warnings issued by the authors in their article and an editorial comment along the same lines, there will no doubt be a good many people and doctors who will be tempted to use this drug. This is undoubtedly an example of liver damage arising in an individual after use of the drug in minimal doses, after four days. Incidentally, there was some loss of weight but not enough to compensate for the possible harm that it might have done this person.

HENRY H. HART, M.D., Syracuse, N. Y.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

TREATMENT OF ITCHING IN RINGWORM OF TOES

To the Editor—1 Kindly give me any suggestion you can offer on a stubborn case I have under my care. A young white woman has a constant annoying itching on the side and undersurface of the third toe of the right foot. The only condition that is visible is the appearance of small vesicles under the skin. This condition is terrifying and is present during the entire hot weather. When the vesicles rupture the surface is raw. Constant rubbing to the stage of acute irritation will relieve the itching for a short while. The physical examination of the patient is negative. The Wassermann reaction is negative. She is a blonde and has a sensitive skin. I have tried various local soothing and stimulating preparations and ultraviolet rays. Nothing has given satisfactory results. 2 I want to ask your advice about my case. I have an annoying itching between my toes at times summer and winter. My condition is relieved by constant rubbing to the stage of acute irritation. I am in the best of health and am 34 years old. My physical examination is negative. The Wassermann reaction is negative. My skin is fairly sensitive. I have tried numerous local soothing and stimulating applications and ultraviolet rays without success. Please omit name and address.

M.D. South Carolina

ANSWER—1 This is most likely a ringworm infection or a case of localized sensitization. In the first case, the roofs of the vesicles laid upside down on the slide and soaked in 10 per cent sodium hydroxide solution for from one to seventy-two hours will possibly show the fungi. If they are found, a weak alcoholic solution of iodine may be painted on once daily. From 3 to 5 per cent should be strong enough. After the vesicles have ceased appearing the iodine should be applied every other day later once a week, some treatment being continued for months after apparent cure. A 1 per cent aqueous solution of potassium permanganate may be used in place of the iodine, changing to an ointment when the permanganate has caused uncomfortable dryness. Weak Whitfield ointment, 3 per cent salicylic acid and 6 per cent benzoic acid in ointment of rose water or ointment of ammoniated mercury may be used. The latter should never be used in connection with iodine treatment.

If the eruption is due to sensitization, protection from soap and water using a 0.5 per cent salicylic acid alcohol wash followed by zinc paste thinly applied should help. Crude coal tar ointment, 6 per cent each of crude coal tar and zinc oxide in petrolatum, often is of value thinly applied.

2 Is there in connection with the itching, maceration of the skin between the toes? If so, this also is ringworm and

Whitfield ointment will probably relieve it. The fungus may be found in the macerated skin. Otherwise it may be local pruritus, and a fairly strong camphor or camphor and menthol ointment or compound resorcinol ointment may relieve it, at least temporarily.

HYPERESTHESIA OF RIGHT HAND AND FOOT

To the Editor—A man aged 56 complains of numbness and a prickly feeling (as when one hits the crazy bone) limited to the thumb and fingers of the right hand and to the right foot from the mid-dorsum to the toes. It has lasted two months. The onset was sudden while the patient was working. These sensations are constant but are more intense in the early morning, especially when he touches some object. The past history is essentially negative except that he had rheumatism twenty-eight years ago in both feet but has been free from any such symptoms since. Physical examination is absolutely negative except that the blood pressure is 170 systolic 98 diastolic. The teeth show lack of care. The reflexes are normal, the proprioceptive and epicritic sensations are normal, sensations of touch, heat and cold are also normal. He states that in grasping an object he cannot always tell how tight he is holding it and if he is not careful he is apt to drop it. Laboratory results seem to be normal: red blood cells 4,600,000; hemoglobin 91 per cent; red blood cells apparently normal in size and shape; white blood cells 5,200; polymorphonuclears 74 per cent; lymphocytes 26 per cent. Routine analysis is absolutely negative. The Wassermann reaction is negative. The patient is a tinter by trade and has worked at this profession for seven years. In his work he comes in contact indirectly with the following pigments: lead chromate, zinc oxide, titanium dioxide, zinc sulphide, iron ferrocyanide, ultramarine blue, iron oxide and lead sulphate. He uses the following solvents: xylene, amyl acetate, toluene, butanol and ethyl acetate. The last is really the only solvent he comes in direct contact with. His job is to mix the pigments with the solvents in nitro-cellulose cotton and match tints. This condition is a constant source of worry and irritation to him and I wish to ask your help in diagnosis and treatment of this case. The facts set forth are meager but that is all there is. Any suggestions on your part as to history or laboratory tests will be carried out. Please omit name and address.

M.D. Kansas

ANSWER—The sudden onset and simultaneous appearance of the disability in the hand and in the foot of the same side suggest that the seat of the lesion is in the brain rather than in the extremities. The described uncertainty in holding objects would indicate involvement of the sensory rather than the motor pathways, testing the patient's ability to count rapidly applied stimuli, to recognize as separate stimuli two simultaneously applied points of a compass and to appreciate numerals traced on the affected hand or foot may disclose impairment in sensation when the more usual methods of testing sensation fail.

The sudden onset, the age of the patient and the hypertension are presumptive evidence that the lesion has a vascular basis. The exact nature of these lesions usually remains in doubt. Presumably there is no disease elsewhere, as in the heart, that might furnish the source of an embolus, and presumably also poisoning with lead has been eliminated as far as this can be done. Most of the poisons affecting the nervous system select the peripheral nerves and tend to be diffuse in their action.

It would be advisable to examine the spinal fluid to make roentgenograms of the head and to check the optic fundi from time to time. Tumors of the brain occasionally announce themselves in an apoplectic form.

The short duration of the disability leaves the prognosis in doubt but, generally speaking, improvement may be anticipated.

Really effective treatment for such conditions is not included in the modern advances of medicine and for want of anything better, physicians still pay homage to the clinicians of the past by prescribing salicylates and iodides. The patient's daily work supplies the necessary physical therapy. Adjustment of any emotional stresses is indicated and a period of physical rest each noon should be advised.

TEST FOR URINARY DIASTASE

To the Editor—In *Surgery, Gynecology and Obstetrics* for July 1933 the test for urinary diastase is referred to and I shall appreciate your publishing a description of this test. It is mentioned twice in the summary of an article on acute pancreatitis on pages 20-22 of the *International Abstract of Surgery*. A. E. CLARK, M.D., Monterey Park, Calif.

ANSWER—Wohlgenuth in 1908 discovered a diastatic ferment in the urine and described a method for its determination. The amount of diastase is given by the number of cubic centimeters of a 0.1 per cent starch solution digested by 1 cc of fresh urine. Normally the diastatic index is between 65 and 30. The presence in the urine is due to the absorption of diastase from the alimentary tract into the blood stream and its excretion by the kidneys.

The original method has been modified by several investigators, notably by E. C. Dodds (*Brit J Exper Path* 3 133 [June] 1922), who found that the result varies with the hydrogen

ion concentration of the urine. Each enzyme has its optimum pH , and for urinary diastase this value is 6.1. Ammoniacal decomposition, making the urine more alkaline, decreases the diastatic power by the Wohlgemuth method but not by the Dodds modification. It is also important to know that diastase clings to urinary deposits and hence the urine should be well shaken before testing.

In renal disease the diastase of the urine may be decreased. In acute pancreatitis or in so-called fat necrosis of the pancreas the diastase is usually markedly increased, rising to 100, 200 or even higher. It is in this disease that the urinary diastase test finds its greatest value. In chronic pancreatitis the diastase may or may not be raised.

The technic of the test as modified by Dodds is as follows. A 0.2 per cent solution is freshly prepared. To 15 cc of urine, 6 cc of a phosphate buffer solution is added. This solution is made thus: Solution A is made by dissolving 11.876 Gm of $NaHPO_4 \cdot 2H_2O$ in 1 liter of boiled distilled water; the solution being kept in a paraffin coated bottle. Solution B is made by dissolving 9.078 Gm of KH_2PO_4 in 1 liter of boiled distilled water and is stored in a paraffin-coated bottle. Fifteen cc of solution A is added to 85 cc of solution B. The mixture should have a pH of 6.1.

After the 15 cc of urine has been mixed with the 6 cc of buffer solution, a series of twelve test tubes one-half by 4 inches in size is set up. First buffered urine in decreasing amounts from 15 cc down to 0.05 cc is added, then distilled water to make 2 cc in each tube. Lastly and rapidly, 1 cc of 0.2 per cent fresh starch solution is added to each tube. The tubes are incubated for thirty minutes at 37°C, cooled, and a few drops of fiftieth normal iodine is added to each tube. The tube that just loses the mauve tint of the iodine is the one in which the starch was just digested. The calculation is then made of the amount of undiluted urine in this tube. For instance if 0.5 cc of diluted urine was required this equals 0.1 cc of undiluted urine. This amount digested 1 cc of 0.2 per cent starch or 2 cc of 0.1 per cent starch. The number of Wohlgemuth units is given by the number of cubic centimeters of 0.1 per cent starch digested by 1 cc of urine in the foregoing instance 20 units of diastase.

Cohen and Dodds have devised a colorimetric method which gives the exact number of units present (*Brit M J* 1:618 [April 5] 1924).

THROMBOSIS AFTER INJECTION TREATMENT OF HEMORRHOIDS

To the Editor—I am writing to ask whether from your experience or knowledge or information available from any source you are able to inform me as to whether there is any danger of causing thrombosis if when injecting hemorrhoids with such mild solutions as 5 per cent phenol (carbolic acid) or 4 or 5 per cent quinine and urea the solution should go directly into the hemorrhoidal veins. I have used the solutions in treating internal hemorrhoids for the last eleven years having treated nearly 900 private cases in that time. There have never been any bad results although I am sure that in many cases the injection was into the veins and that in these cases the quickest and best results were secured in getting rid of the hemorrhoids. The reason I ask this question is that the author of one of the textbooks on proctology states that when he took up the work he was shown how to avoid the veins in making the injection, although he does not know as there would be any harm done if the solution (or some of it) did go directly into the veins. Another reason is that the use of quinine hydrochloride and ethyl carbamate in the injection of varicose veins of the legs involves some danger of phlebitis by a clot forming and lodging in a vein some distance from the section being treated. I had this occur once causing a mild phlebitis. This danger and the tendency to cause sloughing if some of the solution gets into the tissue surrounding the vein has caused me to change to the use of other solutions when injecting varicose veins of the legs. In the standard solution of quinine hydrochloride and ethyl carbamate used in the treatment of the veins there is about three times as much of the quinine as there is in the 4 per cent solution of quinine and urea hydrochloride that I make up for use in treating hemorrhoids. I do not know but that the difference is even greater than this. Whether the difference in the strength of the solutions would make one more apt to cause trouble than the other I am anxious to learn. I have never had any untoward results in using the solution in the treatment of hemorrhoids except in one case in which a patient had an intolerance for quinine in any form. My experience in treating hemorrhoids has convinced me that when the solution that I use goes directly into the veins the reaction is so slight as to be unnoticeable and the hemorrhoids disappear and recovery takes place within three days instead of anywhere from a week to three weeks.

T. F. McNAMARA, M.D., Rochester, N. Y.

ANSWER—It has been shown by experimental study that hemorrhoids which have been injected with 5 per cent phenol or 5 per cent quinine and urea hydrochloride have a thrombosis of at least some of the vessels. In fact in the vascular type of hemorrhoids this is the chief factor in their cure by the injection method. There seems to be little objection to a small amount of solution getting into the vessels nor are instances recorded of ill effects arising from it. Occasionally a patient complains of a bitter taste in the mouth immediately after a hemor-

rhoid has been injected with quinine and urea hydrochloride. The size and character of the hemorrhoidal vessels are such that the probability of phlebitis occurring from a dislodged clot is not as great as in the large veins of the leg such as are injected for a varicose condition. Any clot dislodged from a hemorrhoidal vessel must of necessity be small, but serious complications might arise in case the clot that was loosened became infected. Liver abscess has always been a bogey-man brought forth by those opposed to the injection method. Only one case has been reported (about ten years ago in *THE JOURNAL*). In a series of some 50,000 individual injections for internal hemorrhoids, complications have included slough, secondary hemorrhage, marginal abscess and quinine intolerance but not a single death. There is always some thrombosis of the vessels and cure is probably accomplished and fewer injections are necessary when the thrombosis is relatively extensive.

PREPARATION OF CADAVERS FOR DISSECTION IN TROPICAL COUNTRIES

To the Editor—I shall appreciate if you will kindly give me the best formula for preparing corpses for the teaching of anatomy also your opinion about the Kaiserling formula. I am going to live in the tropics and the climatic conditions there corrupt the cadavers very quickly.

CARLOS LEIVA, M.D., San Salvador, Central America

ANSWER—The blood should be washed out of the blood vessels if practicable, an hour or two after death. This is usually impracticable.

Into one femoral artery by a three-way cannula, equal parts of phenol U.S.P., glycerin and alcohol should be injected. 6 liters to each 150 pounds (68 Kg.). The injection should be done slowly by gravity pressure of 3½ or 4 feet for several hours (over night). Should any arteries be completely blocked through disease or impassable blood clots the parts supplied by them can easily be distinguished from the parts into which the fluid has passed. Such parts may be further treated by the injection with a large hypodermic needle of a considerable amount of this preserving fluid directly into the tissues in several places. The femoral artery should be tied above and below the point of injection and about two days should be allowed for the fluid to penetrate the tissues thoroughly.

To inject arteries with a color mass (Souichon's method) a mixture should be used consisting of crimson aniline solution 45 cc, potassium antimony tartrate solution 12 cc, corn starch (put through a sieve), 1 Kg., hot (not boiling) water, 1 liter. The corn starch and water are rubbed up in a mortar to make a thick cream. The crimson aniline solution is added and then the potassium antimony tartrate. The latter is to prevent the diffusion of the color mass through the walls of the smaller arteries. Force should not be used in injecting the color. It should be allowed to remain in the vessels for fifteen minutes and any excess permitted to run out freely.

Crimson aniline solution consists of crimson aniline crystals, 30 Gm, alcohol 30 cc, water 1 liter.

Potassium antimony tartrate solution is made by dissolving 4 Gm of potassium antimony tartrate in 125 cc of water.

After the color solution has been in the arteries for twenty-four hours, it sets.

Cadavers may then be stored by immersion in tanks containing 3 per cent phenol in water. In this solution they will keep indefinitely even in the tropics.

Kaiserling's fluid is useful for the preservation in something like natural colors of museum preparations. Tumors and organs may be so preserved but not entire human bodies.

TOXICITY OF BENZINE AND WOOD ALCOHOL USED IN SHOE INDUSTRY

To the Editor—Kindly give me information on the following point. In our shoe factory those workmen who are cleaning white shoes are made sick in from one to three weeks by the fluid used to clean white shoes. This fluid is a combination of wood alcohol, benzine, ether and possibly one other petroleum product. Can the workman take any precautions to avoid this illness which is a combination of one or more of the following symptoms: nausea, vomiting (often severe), headache, vertigo, double vision and large dark spots before the eyes?

A. J. STRIMSON, M.D., Kent'sunk, Maine

ANSWER—Faced with manifestations so serious as severe hematemeses the situation would seem to demand the elimination of the offending agents since others less harmful undoubtedly may be substituted.

The percentages of the constituents mentioned in the query are not specified but it is assumed that wood alcohol and benzine make up the bulk of the cleaning agent. Wood alcohol definitely is undesirable for this operation if the inhalation of appreciable quantities of vapors takes place.

Many of the manifestations mentioned may be produced by either wood alcohol or benzene or by a combination of the two. It is noted in the query that some other petroleum products might be present. The hematemesis and the diarrhea suggest the presence of some chlorinated hydrocarbon, such as carbon tetrachloride.

By way of remedy, the wood alcohol should be eliminated from the formula. If practical, higher boiling point petroleum derivatives, such as Stoddard's solvent, should be substituted for the benzene, in order to lessen the evaporation.

Work in booths, or at least under conditions providing for the entrainment of vapors, is desirable. Positive pressure masks are efficacious but are cumbersome and uncomfortable for the workers.

If chlorinated hydrocarbons should prove to be present, a high calcium diet with abstinence from alcohol is desirable.

A small amount of this shoe cleaning agent probably enters the worker's body by way of the skin. The method of application to the shoes should be such as to break contact between the cleaning fluid and the skin.

The testing of the urine of sick workers for wood alcohol or for formaldehyde is likely to yield proof of the part played by this constituent in the causation of the abnormality. This urine may be tested in the following manner:

Distill a small portion of the urine over a steam bath. To 5 cc. of the distillate that may or may not contain methyl alcohol add 2 cc. of potassium permanganate acid solution made up in the manner later described. Allow this to stand ten minutes. Add 2 cc. of oxalic acid prepared as described. When all color has disappeared add 5 cc. of modified Schiff's reagent.

The characteristic blue or pinkish color may appear within a few seconds and at least within ten minutes. Delicacy, 1 in 7000.

To make the permanganate acid solution add 3 Gm. of potassium permanganate to 15 cc. of 85 per cent phosphoric acid and dilute to 100 cc.

To make the oxalic acid solution add 5 Gm. of oxalic acid to 100 cc. of 1 N sulphuric acid.

To make the modified Schiff's reagent add 0.2 Gm. of rosaniline hydrochloride to 120 cc. of hot water. Cool and add 2 Gm. of anhydrous sodium sulphite dissolved in 20 cc. of water. Add 2 cc. of concentrated hydrochloric acid. Dilute to 200 cc. and keep in a glass stoppered amber bottle.

DYSMENORRHEA

To the Editor—Mrs. O. aged 36 who weighs 152 pounds (69 kg.) and whose height is 5 feet 6 inches (167.6 cm.) has had painful menstruation since she was 12 years of age. The menstrual periods occurred at twenty-eight day intervals and lasted seven days. A cystic ovary was removed in 1919. A baby was born in 1928. Extensive perineal lacerations occurring at this time were not repaired. Examination reveals no other abnormality. Three weeks following confinement she commenced having severe cramps for which she was treated with radium. Since the radium was used there has been no flow but there occurs each month most excruciating pain. This paroxysm is followed by a second one in one week which in turn is followed in one week by a severe occipital headache radiating downward along the spine. High voltage roentgen treatments in 1931 gave no relief. Ovarian extract has been ineffectual. Please omit name. MD Nebraska

ANSWER—The pain may be due to cervical stricture incident to use of the radium to radiation changes in the ovary, or to neurosis incident to the induced menopause. Pelvic adhesions or exudates sometimes complicate radiation therapy and may be a factor here.

In treatment the cervix should be dilated to make certain that there is no stricture. Ovarian therapy will be of little avail, with the possible exception of theelin or lutein. Other treatment should be along the lines followed in the usual care of a nervous woman in the menopause. Sedatives, life outdoors and small doses of thyroid are of most aid.

THE PERIOD OF CONCEPTION

To the Editor—There are two articles on the term of conception in women and the menstrual cycle abstracted in THE JOURNAL June 18 1932 and Aug. 12 1933 from the *Zentralblatt für Gynäkologie* of March 19 1932 and June 17 1933. The abstracts are incomprehensible and lead one into a maze of confusion owing to the fact that periods of days are stated in numbers from the beginning or end of the menstrual cycle without stating whether inclusive of the numbers mentioned or not. A perusal of the articles will I am sure make clear and I shall appreciate having an interpretation of each of the articles that will leave no doubt as to their meaning particularly as pertains to their expression of the number of days in certain fractions of the menstrual cycle. Please omit name. MD Illinois

ANSWER—Neither Ogino nor Knaus mentions the word 'inclusive' when giving the number of days in question. Our abstracts do not interpret articles but are limited to reporting faithfully whatever statements are made by the authors.

Ogino whose report is abstracted in THE JOURNAL June 18 1932 gives a precise formula. In the cycle of twenty-eight

days he states that the period of conception is between the tenth and seventeenth days. In a woman whose cycle fluctuates between twenty-six and thirty-two days, the beginning of the period of fertility would be $10 + (26 - 28) = 8$ days after the onset of the flow, and the end would be $17 + (32 - 28) = 9$ days. Consequently, conception would take place in the time between the eighth and twenty-first days after the onset of menstruation.

In the abstract published in THE JOURNAL, Aug. 12 1933 the statement is made that Knaus contends that, in women with a regular menstrual cycle of twenty-eight days, conception can take place from the eleventh to the seventeenth day of the menstrual cycle, and that the day of ovulation is determined by subtracting fourteen days from the length of the cycle. He illustrates this in the following manner: In a regular cycle of twenty-six days, for instance, ovulation takes place on the $(26 - 14)$ twelfth day after the onset of menstruation, in a regular cycle of twenty-eight days on the fourteenth day, and in a cycle of thirty days on the sixteenth day. However if the length of the menstrual cycle fluctuates in the course of a year, that period which begins with the ovulation day of the shortest cycle and ends with the ovulation day of the longest cycle would be considered the term of ovulation. Thus, in a woman whose cycles fluctuate between twenty-eight and thirty-two days ovulation may take place between the fourteenth and eighteenth days after the onset of the last menstruation. Taking into consideration the short life of the two gametes, conception would in this case be possible only in the time from the eleventh to the nineteenth day of the cycle.

CAUSE OF PLEURITIC PAIN DURING MENSTRUATION

To the Editor—A woman aged 20 married five months complains of pleuritic pain at the base of the left lung present only during the menstrual periods (lasting about five days) and about the time of ovulation (lasting one day). This pain has been present periodically ever since an attack of pleurisy three years ago and is getting progressively worse confining the patient to bed during the attacks. Between the attacks the patient is up and around feeling fine. Careful physical examination made between the attacks does not reveal anything abnormal. Laboratory examination (urine and blood) is negative. The patient has consulted many physicians without any benefit. Is this a case of endometrial tissue being present at the base of the left lung or what is it? Have you any suggestions as to diagnosis and treatment?

JAMES L. MILOS, M.D. Chicago

ANSWER—No endocrine process is known that would explain such attacks of pain on an organic basis. It may be that adhesions at the base of the left lung are present and are producing some discomfort and that during the menstrual periods the patient's sensitivity to pain is greatly increased. On the other hand, it is equally possible that a psychic conflict is associated with these sexual processes and that the chest pain is a neurotic expression of this.

The question regarding endometrial tissue being present at the base of the left lung and producing periodic pain at the menstrual periods is difficult to answer. If such is the case it must be a rare, in fact, unique observation. No suggestions as to treatment predicated on the facts that are presented are offered.

HABITUAL ABORTION

To the Editor—I have a 30 year old patient now pregnant who has had six previous pregnancies and six spontaneous evacuations of the uterus. Two of these occurred at six weeks one at two months one at three months and two at six months. In all of these the evacuation process was easily accomplished with no great amount of pain and was in the process of completion before the patient had any warning that such a thing was going to happen. In every case as in the present pregnancy she was anxious to avoid such an occurrence as she is desirous of having children. I have eliminated syphilis as a cause I believe. At least numerous Wassermann tests have all been negative and she has never had any clinical signs of syphilis. Normally the uterus is not large and I cannot outline or find any trace of any growth in the uterine wall that might be causing this. I am now seeking information as to what could be the cause in order, if possible to save the present pregnancy from the same fate. Can you advise me directly or by reference along the line of information I am seeking?

MD Kansas

ANSWER—Cases of habitual abortion are the most unwell come to all obstetricians because so little is known about them. Syphilis rarely causes early abortions and is easily ruled out. Naturally a careful general physical examination is to be made to find any constitutional disease nephritis, hemophilia, diabetes or focal infection.

In the case cited—congenitally underdeveloped uterus may be the reason and little can be done—and that little lies in the newer endocrines, anterior pituitary and corpus luteum hypodermically and by mouth, both however, in the experimental stage. Corpus luteum has some sponsors. Complete

rest in bed (with the foot end raised 8 inches) throughout the length of pregnancy should be insisted on. So many remedies have been suggested that one is ashamed to list them. If the basal metabolism reading is low, thyroid is indicated and in all cases roborant tonics are given with an abundance of all the vitamin-bearing foods. Iron and calcium, arsenic, mercury and iodine, the two first in fair size doses, the other three in small dosage are routine. Although rarely concerned, the husband may not be able to transmit a strong enough life impulse to an ovum to carry it through nine months. De Lee's *Obstetrics*, 1933, has a short but informative chapter on the subject.

RELATIONSHIP IN USE OF VIOSTEROL AND INSULIN

To the Editor—*I have under my care a young lady who is diabetic and seven months pregnant. By the use of insulin and a carefully arranged diet she has been kept sugar free to date. A few weeks ago she complained of pains in her arms and limbs which suggested the usual 'neuritis of pregnancy'. Following the experience of others I placed her on 7 minims (0.4 cc) of viosterol three times a day. She immediately showed an increase of sugar on the same dosage of insulin and diet. A 35 per cent increase in insulin was required to clear the urine. A few days later the viosterol was stopped and it was possible to reduce the insulin dosage. As soon as the viosterol was resumed sugar returned. It has not been practical to determine the blood sugar in this case. What is your explanation for this condition?*

C B JOHNSON MD Eudora Kan

ANSWER—The data furnished do not warrant conclusions. Were the values for carbohydrate, protein and fat for the two periods without viosterol and the two periods with viosterol precisely the same? Did the patient always eat the food served? Were the quantities of sugar and the percentages of sugar in the urine so consistent as to indicate that all the urine was collected daily? Blood sugar tests are almost essential in the critical analysis of a patient with diabetes and it would have been instructive to compare the values obtained with those for blood calcium. Was insulin always given at the same time? Diabetes is treated with diet, exercise and insulin. Was the amount of exercise similar in the two periods?

GRATING SOUNDS IN JOINTS

To the Editor—Several days ago a woman aged 37 consulted me for a complaint of squeaking joints beginning in the left knee, ankles, shoulders, wrists and neck. There is no pain attached only an annoyance because of the sound which can be heard several feet distant. She has never had an inflammation of joints. The past history reveals chronic sinusitis for nine years with several operations including submucous resection. Also mastoiditis at the onset with operation and tonsillectomy at the onset. There has been no trouble with the sinuses since she moved from the seaside four years ago. Suspension of the uterus with right tubo-ophorectomy was done eight years ago and cervical cautery treatment at that time suggests gonorrhea but the patient says that smears at that time were negative. The patient has been divorced seven years. She has two children 16 and 12 years of age. The menses are normal. She feels fine except for the joints. Physical examination is negative except for the joints. No deformity is apparent. Motion of the joints causes a creaking sound with a palpable vibration. It is most marked in the knee. It seems subpatellar. Roentgen examination of the left knee two years ago was reported negative. The patient asks whether the condition may cause a disability in the future. This seems to me to be an early osteoarthritis (degenerative arthritis deformans) and I should appreciate any suggestions for procedure and treatment. Please omit name.

MD, California

ANSWER—"Soft grating" due to hypertrophied fringes and patellar fat pad is common especially in women more particularly in obese women in or past middle age. In the majority of cases this is merely a special localization of general hypertrophy of adipose tissue and the hypertrophied fat fringes are of significance merely in the light of their mechanical interference with the function of the knee.

Hard grating may indicate synovial hypertrophy with definite histologic changes in the synovia thickening induration often cartilaginous metaplasia in the hypertrophic synovial villi and multiple free bodies as in osteochondromatosis of the knee.

For simple fatty hypertrophy of synovial villi and fat pads of the knee without osteoarthritic changes it is sufficient to elevate the heels (relaxation of the gastrocnemius) to wear an elastic knee cap and to strengthen the extensor apparatus of the knee which has become relaxed by irritative effusions and villous stasis in the knee by systematically massaging the quadriceps muscles. Such patients should refrain from kneeling, heavy lifting, prolonged standing and violent exercises of their knees although they should be permitted and encouraged to take mild exercises necessary for their general health. Troublesome hypertrophied pads may be removed through a short median incision and in the absence of any degenerative changes of the knee (osteoarthritis) give a good prognosis.

PORT WINE MARKS AND NEVI IN CHILDHOOD

To the Editor—My baby is 3 weeks old and was born with several port wine marks on its face which are probably telangiectatic spots of the simple flat type. There is one about 25 mm across on the back of the neck which is somewhat covered by the hair of the head. On the face there are several segregated spots situated on the right lid the nasion the left eyebrow and the tip of the nose. These facial spots are rather pinkish and are about one-eighth inch in diameter. I was told that they will probably disappear spontaneously in several months. However I should like to know whether they do disappear spontaneously and what remedies might be employed for removal also what results might be expected.

MEYER E AIBEL MD Brooklyn

ANSWER—The lesion on the back of the neck may be a port wine mark. Unfortunately, there is no satisfactory treatment for port wine marks. In the opinion of most dermatologists radium and x-rays are contraindicated. The lesion can probably be destroyed with blistering doses of ultraviolet radiation or with solid carbon dioxide. However a great many treatments are often necessary over a period of a year or two. In view of the difficulty of eradicating port wine marks, and in view of the fact that it is on the back of the neck and will be covered by hair when the child is older, it is advised that it be let alone.

The description of the lesions on the face suggest what are called spider nevi rather than port wine marks. Port wine marks never disappear spontaneously. Spider nevi often do disappear spontaneously. It is suggested that no treatment be given at present. If they do not disappear they usually can be completely eradicated without scars by the method of electrolysis, provided the electrolysis is expertly applied. It is customary to wait until the child is 2 or 3 years of age or even older before applying the treatment.

TREATMENT OF SYPHILIS

To the Editor—A man aged 28 who is under my care has syphilis. His initial lesion was misdiagnosed by a physician and when he first came to me over a year ago he had had secondaries for several weeks. The Wassermann reaction is 4+. I treated him with ten injections of neoarsphenamine 0.9 Gm at weekly intervals. The Wassermann reaction was 3+. After ten injections of iodobismutol into the buttocks at weekly intervals the Wassermann reaction was negative. A rest period of three weeks was given followed by ten more injections of neoarsphenamine 0.9 Gm. The Wassermann reaction continued negative. Ten injections of thioisomol were given. The Wassermann reaction was negative. The Wassermann test was repeated again in about a month and found to be negative. About three months later the patient returned suffering from headaches and scattered discrete brown macules about the body. The Wassermann reaction was four plus. I immediately started a series of neoarsphenamine injections. I should like to know how I should proceed with this case which I thought I had cured. How long and what treatment should be given? At present after having had about six injections of neoarsphenamine the patient is complaining of loss of pep, aching muscles, dull aching in the head as if the brain were too big for the head and vertigo when the head is bent back. He states that after exercise when he sweats considerably he feels fine but that at all other times he notices the symptoms mentioned. Is this due to the accumulation of arsenic in the body? That is my opinion as I could find no other condition present to which the symptoms might be attributed. Should I change my treatment because of these symptoms? Please omit name and address.

MD, Illinois

ANSWER—The amount of treatment that is thought necessary by leading clinicians to cure early syphilis shows wide variations. This patient has developed a relapsing secondary syphilid after an apparent cure. There are not enough data available to suggest the possibility of this being a reinfection. Treatment should be continued with a course of neoarsphenamine and bismuth compounds in more moderate dosage. Few syphilologists advocate as high a dosage as 0.9 Gm of neoarsphenamine. The symptoms complained of might indicate impending arsenical encephalitis. Another possibility is early syphilitic meningitis. A spinal puncture should be done at this stage and the appropriate treatment will depend in part on the outcome of the test.

MORPHINE AND DIGITALIS IN ANGINA PECTORIS

To the Editor—I recently read that Attinger believes that morphine is contraindicated in angina pectoris. I have used it for years when life seemed saved by it. Do you think one is justified in its use in severe attacks? Is the use of powdered leaves of digitalis any more likely to have a laxative effect than the use of powdered leaves of the tincture?

NATHANIEL F CHILFIER MD Greenfield, II

ANSWER—The article referred to by Attinger is not convincing especially as it is recommending a proprietary drug in place of morphine. It is based partly on clinical experience and partly on the physiologic effects of morphine in experimental animals. Morphine in some experimental animals has a much stronger effect on the vagus than in man and one does not see the same effect on heart rate and conductivity in man.

that is seen in experimental animals. The experience of most clinicians would favor its use in angina and in coronary thrombosis and would not support the view that it resulted in any coronary vasoconstriction or in producing any abnormal rhythm. Roger Froment, in a recent monograph, also states that it may be contraindicated but does not give any cogent reasons. It probably should not be used to the point at which it has a depressant effect on respiration.

The use of powdered digitalis leaves should not have any more laxative effect than a corresponding dose of the tincture.

HEMATURIA AFTER METHENAMINE

To the Editor—If so much methenamine is given in excessive doses over a long period of time that it causes hematuria, what is the source of the blood cells in the urine?

FRED S. WATSON, M.D., Okmulgee, Okla.

ANSWER—When excessive doses of methenamine are given over a long period of time and hematuria occurs, the general consensus seems to be that the bleeding is vesical in origin.

Cystoscopic examination in some of these cases has shown the presence of a hemorrhagic cystitis.

Postmortem examinations in some fatal cases have shown that the bleeding came from the mucous membrane of the bladder. It is generally believed that because of the rapid elimination of the methenamine the kidneys do not suffer irritation and do not bleed. In some of the autopsy cases hyperemia of the kidney pelvis was found.

CHEMICAL TESTS FOR INSULIN

To the Editor—Has a chemical test for insulin in body fluids or tissues been devised? If so, is it reliable? Please describe.

F. E. CLOW, M.D., Wolfboro, N. H.

ANSWER—No chemical test specific for insulin has yet been devised. When it is known to be present in a solution containing little else, its quantity may be estimated by observing its hypoglycemic action when injected into animals (usually rabbits or rats). The determination of the presence or amount of insulin in body fluids or tissues is complicated by the presence of other substances that may exert hyperglycemic or hypoglycemic actions. Such determinations have therefore usually been made only after a preliminary extraction of the insulin in a manner similar to that in which it is obtained from pancreas. The subject of insulin in tissues other than the pancreas was discussed by C. H. Best, C. M. Jephcott, and D. A. Scott in the *American Journal of Physiology* 100:285 (April) 1932.

OXYGEN PERCENTAGE AT VARIOUS ALTITUDES

To the Editor—What percentage of oxygen should I expect to find at an altitude of 600 feet as at Charleston, W. Va.? I see in an editorial in the July 22 issue of *THE JOURNAL* that at an altitude of 8,000 feet the oxygen content is 15.35 per cent, and at an altitude of 20,000 feet 9.4 per cent. The question is: Can this oxygen content be depended on in practically all sections of the country or is there a marked variation to be found in different localities? The barometric pressure here averages 29.65 or about 750 mm. with slight variations.

WIRT B. WILSON, M.D., Charleston, W. Va.

ANSWER—The partial pressure of oxygen at an altitude of 600 feet above sea level is not sufficiently lowered to present any physiologic problem in respiration. At a given altitude the relative proportion of oxygen is essentially the same everywhere under comparable conditions. Small variations in the content of carbon dioxide and that of gases included through industrial or other conditions do not affect in any significant way the partial pressure of oxygen, though such constituents as carbon monoxide may become objectionable in rare instances.

ABNORMAL MENSTRUATION

To the Editor—A girl, well developed and proportioned, aged 11 years and 8 months, 4 feet 11 1/4 inches (151 cm.) tall, weighing 120 pounds (54 Kg.) has started menstruating for a period of seven or eight days and profusely. Her mother and grandmother have this history before her. Her basal metabolism rate is -6; otherwise she appears normal. Any suggestion as to the future conduct of this case will be greatly appreciated. Please omit name and address.

M.D., Texas

ANSWER—Presuming that a local examination has revealed no apparent cause for the bleeding from the uterus and vagina such as a malignant condition or polyps, one might think of an abnormal endocrine function and the latest theories point to the anterior lobe of the pituitary body, which seems to be the general regulator of the ovary and uterus.

From the mass of contradictory reports regarding the effects of theelin, progesterin, progynon, and so on, it is difficult to select

a remedy. Success, however, has been obtained in a few cases by administering the blood of the mother subcutaneously in 20 cc. doses. Experimentally, one might try the blood of the mother taken at the time of her menstruation or the blood of a pregnant woman. Recently, in one similar case, the latter seemed to have a good effect. A small dose of thyroid should be given.

Failing endocrinal treatment, a curettage is the next procedure.

USE OF OIL IN MASSAGE

To the Editor—Please give me formula for a good oil to be used in massage for arthritis. Kindly omit name.

M.D., Illinois.

ANSWER—The routine use of oil as a "lubricant" in massage is, in general, to be deprecated. Talcum powder is more useful than a fat, in many cases. When a fatty lubricant is needed, as on a sensitive and dry skin, the sparing use of white petrolatum is all that is required or desirable. If in a case of arthritis, rubefaction is wanted along with massage, a liniment may be employed during the manipulations, and, assuming the arthritis to be possibly of rheumatic origin, methyl salicylate (20 per cent) added to liquid petrolatum might be the best.

CRIBBING IN HORSES

To the Editor—What is the human counterpart if any of the disease in horses known as "cribbing"? What are the symptoms and what is the name of the disease? No references on the subject are available here. Please omit name.

M.D., Wisconsin.

ANSWER—There is apparently no disease in human beings which is the exact counterpart of cribbing in horses. In cribbing the animal grasps the manger or some other object with the incisor teeth, arches the neck, makes peculiar movements with the head and swallows quantities of air. The nearest resemblance to this condition is aerophagy, in which human beings swallow considerable quantities of air, which is there after eructated, and pica, a craving for unnatural articles of food or a depraved appetite seen sometimes in children, in cases of hysteria, in chlorosis and in pregnancy.

IDIOPATHIC MUSCULAR ATROPHY

To the Editor—I have under my care a white man in his early thirties who is suffering from progressive muscular atrophy. He noticed the first symptoms at the age of 15 years. The progress of the disease has been rather slow but nevertheless steady. The muscular flaccidity and wasting at present are manifest almost entirely in the lower extremities and the muscles of the thumb. The blood and spinal fluid Wassermann reactions are negative and he has a normal colloidal gold curve. Kindly give me information as to any treatment that will arrest the progress of the disease or that will cure him. Kindly omit name.

M.D., South Carolina.

ANSWER—This presumably is a case of idiopathic muscular atrophy, also called muscular dystrophy and not spinal muscular atrophy. The most recent and most promising treatment for dystrophy is the giving by mouth twice a day of about half an ounce of glycine (glycocol). Another treatment advocated on theoretical grounds and which seems to have given some results is hypodermic injection of epinephrine and pilocarpine.

SNEEZING AS A SYMPTOM OF COLD ALLERGY

To the Editor—In *THE JOURNAL* September 16, Dr. S. M. Feinberg explains the sneezing of the vasomotor rhinitis patient on arising in a comprehensive manner. In observing a number of patients similarly afflicted, I have found most of them to be also definitely allergic.

I should like to emphasize the probability of an allergy to cold. While the victim is in bed, his skin temperature more nearly approaches that of the body than at any other time. The mere act of throwing off the bed clothes and either touching the floor or getting into slippers abruptly lowers the skin temperature. Thus the congestion of the sphenoidal area and the entire perinasal mucosa appears with resulting sneezing.

This line of reasoning is brought to mind by the dramatic motion pictures which Duke displayed at the Milwaukee session of the American Medical Association. He showed acute attacks of asthma precipitated by heat or cold in victims susceptible to either.

Following his therapeutic suggestions, the treatment for the sneezing patient would be gradual desensitization by increasing the skin tolerance to cold with graduated colder shower baths ending up in time with possibly rapid friction of the skin with ice. This is of course with the premise that the patient is allergic to cold.

Many examples exist of such patients who sneeze when a window is opened in a warm room or who sneeze on going outside into cold air and yet do not develop any subsequent respiratory infection. In one case in particular, sneezing and nasal congestion could be produced by running hot water on the wrist and hand and placing the wet parts in the crack of a partially opened door during cold weather. This illustrates the minute sensitivity of such patients.

RONALD B. ROGERS, M.D., Neenah, Wis.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY *Written*
Boston Chicago Cleveland New York Philadelphia St Louis and San Francisco Oct 28 *Oral* New York Dec 15 16 Sec. Dr C Guy Lane 416 Marlboro St, Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY *Written (Group B Candidates)* The examinations will be held in various cities of the United States and Canada, Dec 9 Application necessary before Nov 1 Sec. Dr Paul Titus 1015 Highland Bldg Pittsburgh

ARKANSAS *Basic Science* Little Rock Nov 6 Sec. Mr Louis E Cebauer 701 Main St Little Rock *Regular* Little Rock Nov 14 Sec. Dr A S Buchanan Prescott *Homoeopathic* Little Rock Nov 14 Sec. Dr Allison A Pringle Eureka Springs *Eclectic* Little Rock Nov 14 Sec. Dr L J Marshall 401 W 3d St Little Rock

CALIFORNIA *Regular* Sacramento Oct 16 19 *Reciprocity* Sacramento Oct 16 Sec. Dr Charles B Pinkham 420 State Office Bldg Sacramento

CONNECTICUT *Basic Science* New Haven Oct 14 *Prerequisite to license examination* Address State Board of Healing Arts 1895 Yale Station New Haven *Regular* Hartford Nov 14 15 *Endorsement* Hartford Nov 28 Sec. Dr Thomas P Murdock 147 W Main St Meriden *Homoeopathic* New Haven Nov 14 Sec. Dr Edwin C M Hall 82 Grand Ave New Haven

FLORIDA Jacksonville Nov 13 14 Sec. Dr William M Rowlett Box 786 Tampa

ILLINOIS Chicago Oct 17 19 Supt. of Regis Mr Eugene R Schwartz Springfield

MAINE Portland Nov 14 15 Sec. Dr Adam P Leighton Jr 192 State St, Portland

MASSACHUSETTS Boston Nov 14 16 Sec. Dr Stephen R. Hmore 144 State House Boston

MINNESOTA Minneapolis Oct 17 19 Sec. Dr E J Engberg 320 St Peter St St Paul

MISSOURI Kansas City Oct 17 19 State Health Commissioner Dr E T McLaughlin State Capitol Bldg Jefferson City

NEBRASKA Lincoln Nov 22 23 Director Bureau of Examining Boards Mrs Clark Perkins State House Lincoln

NEVADA Carson City Nov 6 Sec. Dr Edward E Hamer Carson City

NEW JERSEY Trenton, Oct 17 18 Sec. Dr James J McGuire 28 W State St Trenton

SOUTH CAROLINA Nov 11 Sec. Dr A Earle Boozer 505 Saluda Ave Columbia

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, July 15

Hospitals Approved for Intern Training

Georgia Baptist Hospital Atlanta Ga
Jackson Park Hospital Chicago
Futkin Memorial Hospital Neptune N J
Trinity Hospital Brooklyn

Hospitals Approved for Residencies in Specialties

General Hospital of Fresno County Fresno Calif Residencies in medicine and surgery
San Bernardino County Charity Hospital San Bernardino Calif Medicine and surgery
Grady Hospital Emory University Division (Colored Unit) Atlanta Ga Pediatrics
Eye Ear Nose and Throat Hospital New Orleans Ophthalmology and otolaryngology
Barnard Free Skin and Cancer Hospital St Louis Dermatology malignant diseases and surgery
Margaret Hague Maternity Hospital Jersey City Obstetrics
Newark Eye and Ear Infirmary Newark N J Ophthalmology and otolaryngology
New Jersey Orthopaedic Hospital and Dispensary Orange N J Orthopedics
Morrisania City Hospital New York Urology
Sea View Hospital Staten Island N Y Thoracic surgery orthopedics otolaryngology radiology dermatology and sypthology pediatric tuberculosis and metabolism
Presbyterian Hospital Philadelphia Pathology

Maryland June Examination

Dr Henry M Fitzhugh secretary Board of Medical Examiners of Maryland reports the written examination held at Baltimore June 20-24 1933 The examination covered 9 subjects and included 90 questions An average of 75 per cent was required to pass One hundred and twenty candidates were examined 118 of whom passed and 2 failed The following colleges were represented

College	PASSED	Year Grad	Per Cent
College of Medical Evangelists		(1932)	70
Yale University School of Medicine	(1931) 80	(1932)	81
George Washington University School of Medicine		(1932)	78

Georgetown University School of Medicine	(1931)	75	1
(1933) 79	80	81	83
85	86	87	88
89	90	91	92
Howard University College of Medicine	(1932)	83	1
84	85	86	87
88	89	90	91
School of Medicine of the Division of the Biological Sciences University of Chicago	(1932)	85	5
Johns Hopkins University School of Medicine	(1927) 83	(1931)	86
90	91	92	93
84	85	86	87
88	89	90	91
92	93	94	95
86	87	88	89
90	91	92	93
87	88	89	90
91	92	93	94
95	96	97	98
89	90	91	92
93	94	95	96
University of Mid. School of Med and Coll of P and S	(1931)	85	3
89	90	91	92
93	94	95	96
85	86	87	88
89	90	91	92
93	94	95	96
87	88	89	90
91	92	93	94
82	83	84	85
University of Nebraska College of Medicine	(1930)	86	8
(1932) 83			
Temple University School of Medicine	(1932)	86	6
University of Pennsylvania School of Medicine	(1933)	86	5
Meharry Medical College	(1932) 82	94	4
University of Virginia Department of Medicine	(1930)	81	2
Medizinische Fakultät der Hamburgischen Universität	(1920)	84	1
Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia	(1931)†	79	8
Universität Bern Medizinische Fakultät	(1933)†	96	4
College	FAILED	Year Grad	Per Cent
Howard University College of Medicine	(1932)	74	4
Laval University Faculty of Medicine	(1925)	69	2

Ten physicians were licensed by reciprocity and 3 by endorsement from April 26 to August 1 The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Per Cent
George Washington University School of Medicine	(1930) Dist Colum		
Howard University College of Medicine	(1929)	84	5
State University of Iowa College of Medicine	(1924)	80	4
University of Maryland School of Medicine and College of Physicians and Surgeons	(1928) N Y	(1930) N Carolina	
Washington University School of Medicine	(1932)	81	2
Columbia University College of Physicians and Surgeons	(1932)	New York	
Western Reserve University School of Medicine	(1930)	Ohio	
Medical College of Virginia	(1929)	(1931)	Virginia
College	LICENSED BY ENDORSEMENT	Year Grad	Per Cent
George Washington University School of Medicine	(1931) N B M Ex		
Johns Hopkins University School of Medicine	(1931) N B M Ex		
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931) N B M Ex		
* Grade not reported			
† Verification of graduation in process			

Rhode Island July Examination

Dr Lester A Round director, Rhode Island Public Health Commission reports the written and practical examination held in Providence, July 6-7, 1933 The examination covered 7 subjects and included 70 questions An average of 80 per cent was required to pass Eight candidates were examined, 5 of whom passed and 3 failed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Tufts College Medical School	(1932)	84	
University of Michigan Medical School	(1925)	85	
Long Island College of Medicine	(1932)	85	8
Hahnemann Medical College and Hosp of Philadelphia	(1932)	80	
University of Toronto Faculty of Medicine	(1924)	81	8
College	FAILED	Year Grad	Per Cent
Hahnemann Medical College and Hosp of Philadelphia	(1932)	76	8
University of Montreal Faculty of Medicine	(1932)	75	5

South Dakota July Report

Dr Park B Jenkins director, Division of Medical Insurance, reports the oral written and practical examination held at Watertown July 18 19 1933 The examination covered 15 subjects and included 105 questions An average of 75 per cent was required to pass Ten candidates were examined all of whom passed Five physicians were licensed by reciprocity and two by endorsement The following colleges were represented

College	PASSED	Year Grad	Per Cent
Rush Medical College	(1924) 87	(1931) 88	85
Johns Hopkins University School of Medicine	(1931)	84	
University of Minnesota Medical School	(1932) 85	(1931)	90
Creighton University School of Medicine	(1932)	80	
University of Nebraska College of Medicine	(1931)	80	
Jefferson Medical College of Philadelphia	(1929)	80	
College	LICENSED BY RECIPROCITY	Year Grad	Per Cent
Lova University School of Medicine	(1928)	76	4
State University of Iowa College of Medicine	(1924)	76	4

John A Creighton Medical College	(1915)	Wyoming
Creighton University School of Medicine	(1928)	Nebraska
University of Nebraska College of Medicine	(1926)	Nebraska
College LICENSED BY ENDORSEMENT		
Northwestern University Medical School	(1933)	N B M Ex
University of Nebraska College of Medicine	(1931)	N B M Ex

Tennessee June Examination

Dr H W Qualls secretary, Tennessee State Board of Medical Examiners, reports the written examination held at Knoxville, Memphis and Nashville June 15-16 1933 The examination covered 8 subjects and included 80 questions An average of 75 per cent was required to pass Seventy nine candidates were examined all of whom passed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Tulane University of Louisiana School of Medicine	(1933) 88 6	92 6	76 8
Meherri Medical College	77 9 78 5 79 5 81 81 6 82 3 82 6 82 6 82 9 83 3 83 8 84 1 84 6 85 85 3 85 5 85 5 85 8 85 8 85 9 85 9 86 86 5 86 8 86 8	(1929) 84 1 (1933)	75 3,
Univ of Tenn College of Med	77 5 77 8 78 5 79 9 80 1 81 3 81 9 82 5 82 5 82 6 83 83 3 83 3 83 9 84 84 9 84 9 85 85 5 85 5 85 5 87 3 87 5	(1932)	81 3
Vanderbilt University School of Medicine	(1933) 78 1 79 80 9 80 9 81 6 82 5 82 8 83 83 5 83 5 83 8 84 84 3 84 8 85 1 85 1 85 3 85 5 86 5 86 6 86 8 87 87 87 3 87 6	(1933)	87 1
Marquette University School of Medicine	(1933)		

Six physicians were licensed by endorsement from July 11 to August 15 The following colleges were represented

College	LICENSED BY ENDORSEMENT	Year Endorsement
University of Georgia Medical Department	(1925)	Georgia
Rush Medical College	(1931)	Illinois
Johns Hopkins University School of Medicine	(1929)	Maryland
University of Cincinnati College of Medicine	(1924)	Ohio
Vanderbilt Univ School of Medicine	(1931)	Mississippi N B M Ex

Book Notices

Medical Relations Under Workmen's Compensation A Report Prepared by the Bureau of Medical Economics American Medical Association Paper Price 75 cents Pp 157 Chicago American Medical Association 1933

Workmen's compensation laws regulations and court decisions have been the subject of many articles and reports This report of the Bureau of Medical Economics is the first study of workmen's compensation in the United States in which an attempt has been made to trace from the beginning of workmen's compensation laws the relation of the medical to other phases of compensation administration

The evolution of the present system of compensation is traced in chapter I Chapter II is devoted to a discussion of the prevention of accidents Attention is drawn to a shifting attitude toward accident prevention from great emphasis, in former years on the care and maintenance of equipment to the present growing attention to the human element in industry

One chapter is devoted to a description of the evolution of administration of workmen's compensation In this discussion particular attention is given the insurance carriers It is pointed out that

methods of administration like the original legislation depend far more on the continuous intelligent application of pressure by the interests involved than on differences in laws and administrative forms Employers and insurance companies have been continuously alive to their interests and skilful in pressing them The physicians have shown less capacity to protect their interests and have suffered the consequences of that incapacity

In closing the discussion on the growth in the provisions for medical care the opinion is advanced that

Without in any way disparaging the function of other factors in the field of compensation it seems to be a very conservative conclusion that the neglect of the medical factor in the early stages has handicapped all the workings of compensation and that one of the most pronounced features of the evolution of compensation has been the increased recognition of the importance of the medical factor at every stage

Subjects that should be of special interest to all physicians who are in any way affected by workmen's compensation are

"Choice of Physicians," "Payment for Medical Service" and "Professional Relations in Compensation"

It is somewhat difficult to assign the responsibility for the completely successful although usually silent opposition to every effort to secure medical representation or adequate pay for the physicians employed in compensation administration The employers and insurance carriers can probably be assumed to belong to this opposition as a part of their effort to keep down payments to physicians Members of commissions naturally react against any move that would reduce their authority So it remains true that the physicians who are the only persons concerned with compensation who have undergone a long course of training to prepare them for their work and whose decisions are so vital to every action still remain the lowest paid and with almost the least influence in compensation administration of any parties concerned

Among the conclusions it is suggested that there should be free choice of physicians, within certain limitations there should be no solicitation or compulsion exercised on patients, all expenditures for medical care should go to those who give that care, and there should be medical representation in all compensation institutions proportionate to the medical interests involved

This report should be valuable to all county and state medical societies, industrial commissions or departments and insurance carriers handling workmen's compensation cases The work is made more valuable by a number of charts, graphs and tables

Die Lungentuberkulose Von Dr med H Gissel Facharzt für Chirurgie und Dr med P G Schmidt Facharzt für Lungenkrankheiten Mit einem Geleitwort von Prof Dr W v Gaza Paper Price 18 marks Pp 201 with 121 illustrations Leipzig Georg Thieme 1933

Gaza states in the introduction of this monograph on pulmonary tuberculosis by his pupils Gissel and Schmidt that it is needed because of the team work of physicians and surgeons brought about by recent advances The newer pathologic conceptions regarding the development and hematogenous spread of pulmonary tuberculosis and the increased knowledge regarding the culture and the morphology of the tubercle bacillus, are also matters which Gaza feels warrant this publication. As would be expected under such guidance the work starts with a brief but scholarly review of the general history of tuberculosis The authors conclude this chapter with a review of the factors responsible for the declining death rate attributing this to better living standards, economic conditions, earlier diagnosis and improved therapy The possibility of the decline being due to epidemiologic laws is not discussed England and Germany are given the lowest death rates for 1928, namely, 90 per hundred thousand living The tubercle bacillus is thoroughly dealt with in regard to varying morphology the possibility of filtrable types and the modern cultural and staining procedures The virulent smooth form of culture and the avirulent rough form are discussed in regard to Calmette's BCG Allergy and immunity are discussed and also the matter of droplet and dust infection While the latter is perhaps of greater importance, it is pointed out that the larger droplets expelled when a patient coughs may contain upward of 23,000 tubercle bacilli

Excellent colored plates depict phases of the pathology of tubercle in the lungs The conception of Liebermeister and Lowenstein of the frequent escape of tubercle bacilli from the hilus glands into the blood stream is accepted with its significance in the spread of the disease History taking in diagnosis is rightly stressed Only praise can be given the chapters on the symptomatology physical examinations, course of the disease laboratory tests and roentgen examinations The reproductions of the roentgenograms of the chest are exceptionally good Every phase of the disease is depicted from a large number of films Tuberculous pleurisy is pictured and described Bed rest is advised only until the disappearance of the friction rub or the complete absorption of the exudate This is not sufficient One cannot agree that artificial pneumothorax of a healthy lung should be undertaken to promote the delayed absorption of fluid on the opposite side nor can one entirely agree that the reason for the serious relapse with pulmonary tuberculosis in upward of 30 per cent of patients with uncomplicated pleurisy often within a year is due to the pleurisy having been of hematogenous spread It is more probable that the reason for so many patients with a history of pleurisy with effusion suffering relapse with serious lung involvement is that as a result of the fluid compression, extensive paren

chymatous lesions may have temporarily disappeared. The roentgenograms after the fluid has disappeared are therefore apt to be misleading. A few extrapulmonary forms of tuberculosis are described especially the commoner complications. In the treatment of laryngeal disease rest by silence, should be placed first rather than last. The sanatorium cure and the climate of altitude are recommended. It would seem that complete rest in bed over a prolonged period after fever has disappeared and symptoms have improved is not sufficiently stressed.

The surgical methods of treating pulmonary tuberculosis are well illustrated and discussed and the history of each procedure is related. The differential diagnosis treats of the numerous forms of bronchial and lung disease that may be mistaken for tuberculosis. The recognition of tuberculosis as a *volks-seuche* is not neglected and the social steps to combat the disease are outlined. The book should be a valuable addition to any tuberculosis library.

Nutrition By Graham Lusk ScD MD LLd V Chio Medica A Series of Primers on the History of Medicine Edited by E B Krumbhaar MD Cloth Price \$1.50 Pp 142 with 13 illustrations New York Paul B Hoeber Inc 1933

Here is another primer in the series of medical historical items now being published by the Hoeber press. This volume was finished just before the death of Dr Lusk on July 18, 1932. Nutrition is of course, as old as man. Tracing its history, Dr Lusk shows its outgrowth from general medical knowledge and the developments of physiology and chemistry to its development as a specialty of medical science beginning with the last two centuries. After discussing these original developments, Dr Lusk traces chronologically the advances of the nineteenth century in various nations. In a final chapter on the modern phase he calls attention particularly to the development of calorimetry. He concludes with the statement: 'Even in medical schools little thought is given to this subject. The schools of home economics however, form a group of people who really understand the subject.' This indictment of medicine is probably warranted in large part and certainly constitutes a challenge to the medical profession.

The Treatment of Rheumatoid Arthritis and Scleritis By A H Southwaite MD FRCP Assistant Physician Guy's Hospital London Second edition Cloth Price 6/- Pp 131 with 4 illustrations London H K Lewis & Company Ltd 1933

In this edition the work has been revised to embrace an epitome of the results of modern research in the treatment of rheumatoid arthritis. A chapter on the diagnosis and treatment of sciatica is included. The book is divided into two parts containing four chapters each. The first part deals with the etiology of rheumatoid arthritis and the first chapter is devoted to the classification of arthritis and to distinguishing each of the following from the others: rheumatoid or atrophic arthritis, menopausal rheumatoid arthritis, osteoarthritis or hypertrophic arthritis, and infectious or pseudo-atrophic arthritis. Rheumatoid or atrophic arthritis is defined as a disease affecting almost exclusively women of child-bearing age and characterized by well marked constitutional changes accompanied sooner or later by symmetrical swelling of many small joints brought about by periarticular changes. In chapter II is considered the part played by focal infection in the etiology of this type of arthritis and its importance is rather minimized. Rheumatoid diathesis is reviewed in chapter III and the question of vitamin deficiency is discussed. Chapter IV includes discussions concerning metabolic changes and observations on biochemistry. In the second part of the book the various types of treatment are summarized. In the first chapter is outlined the treatment of early rheumatoid arthritis, and discussions concerning diet, heat, elimination of foci, vaccine and medicinal treatment and massage are included. The second stage of the disease is discussed in the next chapter and the uses of splints, passive motion and radiant heat are discussed. The treatment for deformity or the third stage is next considered and medicinal non-peptic protein therapy as well as manipulation and splints is considered from the standpoint of relative merit. The final chapter is devoted to a discussion of sciatica its diagnosis and treatment. According to the author the term 'sciatica' refers to a symptom and not a clinical entity and consists of pain felt in the course of the sciatic nerve. The classification of primary, secondary, central and peripheral

types of sciatic neuritis are discussed with regard to their etiology. This chapter is satisfactory except that mention is not made of tumors of the spinal cord and of congenital developmental narrowing of the intervertebral foramina of the lower lumbar vertebrae. The treatment of sciatica as laid down is not discriminative and therefore is misleading in places. Nerve stretching, acupuncture, and injection directly into the nerve are discussed as though there were no associated dangers of disability following such treatment. The book is interesting and should prove of value to those who do not wish an exhaustive study of the subject but merely a cursory summation of facts brought down to the present.

The Heroic Age of Science: The Conception Ideals and Methods of Science Among the Ancient Greeks By William Arthur Heidel Research Associate of the American Council of Learned Societies of the Carnegie Institution. Published for the Carnegie Institution of Washington [Publication No 442] Cloth Price \$2.50 Pp 203 Baltimore Williams & Wilkins Company 1933

The early Greeks laid the foundations of science. The author gives a nice evaluation of the hippocratic contributions and of the work of Aristotle, and of the writings of Theophrastus and other important Greek contributors. The Greek method was essentially accurate observation and careful recording of results. It involved the framing of generalizations and then the testing of those generalizations by fact. In his essays the author discusses observation and induction as used by the Greeks, then classification, analogy and experimentation. This, obviously, is the procedure for all scientific work. Greek science was characterized by a free play of intellect. Even though many of the discoveries announced as those of Greece had been brought in from other countries, the Greek method carried this knowledge to a height of perfection not reached elsewhere.

Holt's Diseases of Infancy and Childhood: A Textbook for the Use of Students and Practitioners By the late I Emmett Holt MD and John Howland MD Revised by L Emmett Holt Jr MD Associate Professor of Pediatrics Johns Hopkins University and Rustin McIntosh MD Carpenter Professor of Diseases of Children Columbia University Tenth edition Cloth Price \$10 Pp 1240 with 200 illustrations New York & London D Appleton & Company 1933

In this the tenth edition of the original book by L Emmett Holt, Sr, extensive changes have been made. The sections on nutrition and nutritional disorders, the deficiency diseases and diseases of the blood and diseases of allergy have been completely rewritten as have also many other sections. New articles have been added on chemical relations in childhood, immunology, serum diseases, burns, lead poisoning, dwarfism, encephalitis and many of the infectious diseases. Several contributors in addition to the two authors responsible for the text have contributed the sections on various subjects so that the work more nearly approaches a system of pediatrics than a volume representing the views of one authority. The first edition of this work as explained by Dr C A Park was an event in the history of pediatrics in this country for it codified and defined this subject and separated it clearly from general medicine. The death of Dr Howland who succeeded Dr Holt in the production of this work caused it to devolve on the present editors. They have had an excellent foundation on which to build so that the text now available may be considered authoritative, modern and perhaps the most useful of all the general textbooks available in this field.

Internal Medicine: Its Theory and Practice In Contributions by American Authors Edited by John H. Muer, BS MD FACC Professor of Medicine in the Tulane University of Louisiana School of Medicine Cloth Price \$10 Pp 1316 with 39 illustrations Philadelphia Lea & Febiger 1932

This volume has now been before the medical profession for almost a year and has had wide acceptance as a useful text book as well as a reference work for the office and the hospital. The contributors have been chosen as recognized authorities on the problems they discuss and have been given considerable latitude in the development of their chapter. Repetition has been avoided by grouping the material according to certain classifications, discussing first the characteristics common to the group and secondly the special problems associated with individual diseases. Moreover there is an excellent systematic bibliography following the discussion of each disease. The volume proceeds in four parts to discuss the infectious disease, systemic disorders, disease of internal organs, and the

lism, physical and chemical agents, and finally diseases of the nervous system. Because of its authenticity the book may be especially recommended as a modern textbook of the practice of medicine.

The Anatomy of the Eye and Orbit Including the Central Connections Development and Comparative Anatomy of the Visual Apparatus. By Eugene Wolff. Ophthalmic Surgeon Royal Northern Hospital. London. Cloth. Price 31s 6d. Pp 310 with 173 illustrations. London H. K. Lewis & Company 1933.

This is a concise, profusely illustrated book on the anatomy and anatomic neurology of the eye and orbit. It is so written as to give the essential structures and their relations and interrelations to the cranial anatomy, especially the neurologic anatomy, without tiring the reader with the unessential or the minute details that would be of interest chiefly to the research worker. The material is arranged in a logical order, the bony orbit and accessory sinuses being given in chapter I. Chapter II deals with the sclera, choroid and retina. In chapter III the lids, muscles, conjunctiva and lacrimal apparatus are described. The gross description and biomicroscopy of the anterior segment of the globe as well as the vitreous is treated in chapter IV. Chapter V describes the external ocular muscles and Tenon's capsule. The cranial nerves associated with the eye as well as the ciliary ganglion are discussed in the first part of chapter VI. The optic nerve and its central connections, the involuntary nervous system and pathway of the light reflex complete this chapter. Chapter VII deals entirely with the embryology and postnatal growth of the eye, and the last chapter contains in its fifty pages a good outlined summary of our knowledge of comparative anatomy. Under the title of practical considerations, the author in several chapters introduces the clinical significance of lesions or disease of various structures. The illustrations, many of which are original, are well selected and though they are all black and white they serve materially to illustrate and clarify the text. The book presents little clinical ophthalmology but does give the anatomic basis for clinical study.

The Control of Football Injuries. By Marvin Allen Stevens M.D. Assistant in Surgery New Haven Hospital and Winthrop Morgan Phelps M.D. Professor of Orthopaedic Surgery Yale University. Cloth. Price \$3. Pp 241 with illustrations. New York A. S. Barnes & Company 1933.

The authors of this volume include a physician who was also head football coach of Yale University, and the professor of orthopedic surgery in the same university. Being themselves responsible for the care of the athletes in that school during the football season they write with authority and experience. They have been in intimate touch with the various committees and groups that have been attempting during recent years to reform the game so as to remove from it the elements of too great danger. Football films have been studied. The authors realize the danger of the game but feel that it is worth saving, particularly since the average spectator is in greater danger driving to a football game than is a player who plays in it. In their book they consider first training and physical equipment for the game, then the use of physical therapy in treating athletic injuries, next they discuss the various types of injuries and their control. They conclude with a glossary of medical and technical terms and with the results of a careful statistical study of fatalities and injuries. The book is thus exceedingly important for every one interested in the game of football, but particularly for physicians who may be associated with the development and training of athletes. The volume is handsomely illustrated with scenes taken from various films.

Die Brustwandpulsationen als Symptome von Herz und Gefässkrankheiten. Von Dr. Wilhelm Dressler. Assistent der Herzstation in Wien. Cloth. Price 15 marks. Pp 181 with 87 illustrations. Vienna Wilhelm Maudrich 1933.

This publication apparently for the first time assembles in systematic form the many pulsation phenomena observed over the thorax. Observation by simple clinical methods chiefly inspection and palpation are assembled and analyzed with especial reference to their physiologic, diagnostic and therapeutic significance in cardiovascular disease. The isolated observations of pulsation phenomena of the thorax by many of the older clinicians such as Bamberger, Skoda, Ortner and Talma as well as those of the present generation of cardiolo-

gists, are assembled and, in addition, the author has pursued a sensible plan of clinical investigation, using the simple means of ordinary physical examination. This is remarkable in these days of elaborate graphic methods of investigation of cardiovascular disease, which have forced the older although none the less valuable methods of clinical investigation within this field into the background. The volume is carefully planned, well written and adequately illustrated. The first part is a general discussion of the mechanism and interpretation of thoracic pulsations and the second part considers them in reference to special cardiovascular lesions. There is an extensive bibliography listing many of the important older and almost forgotten writings within this field. This book should be of value to all who are interested in the physical examination of patients.

Inherited Abnormalities of the Skin and Its Appendages. By E. A. Cockayne D.M. F.R.C.P. Physician to the Middlesex Hospital. Cloth. Price \$8. Pp 391 with illustrations. New York & London Oxford University Press 1933.

This apparently is the first volume devoted to the importance of heredity in relationship to the development of a single portion of the human body. It constitutes a careful summarization of present knowledge in relationship to the influence of hereditary factors on the development of abnormalities of the skin, teeth, hair or nails. The book, therefore, is a complete guide to most of the extraordinary appearances which fascinate human beings in the sideshows and museums. Beginning with a chapter on the relationship of the mendelian conceptions of inheritance to the special problems affecting the skin, the author takes up physiologic abnormalities and metabolic errors. He then considers errors of development of the elastic tissue, which are of course associated with cases of so called rubber skin and with cases of epidermolysis. He then considers the dyskeratoses and gives special consideration to ichthyosis, or so called fish skin. Thereafter he concerns himself with abnormalities of the nails, the hair and the breasts with unusual disorders of growth and of pigmentation, and finally with conditions of doubtful etiology. He has depended largely for his material on such works as the Treasury of Human Inheritance and various other books in this field. The volume is complete with an excellent index and there are accurate bibliographic references to all the special considerations appearing in the periodical literature. The illustrations consist primarily of charts showing the order of inheritance of the conditions discussed, but there are also a few plates illustrating unusual appearances. The book should be a most useful work of reference for dermatologists and has at the same time the appeal of interest to every physician.

The New Dentistry. A Phase of Preventive Medicine. Six Lowell Lectures. By Leroy Matthew Simpson Viner D.M.D. M.D. F.A.C.S. Dean of the Dental School and Professor of Clinical Oral Surgery in Harvard University. Cloth. Price \$2. Pp 219. Cambridge Mass. Harvard University Press 1933.

This volume consists of six lectures delivered as a Lowell Institute course in 1933. It traces the history of dentistry from the earliest times to the present, analyzing the American contribution, which of course, is the chief contribution in the advancement of this science. Dr. Miner feels that there is no reason why dentistry should not develop, at least for the present, as an oral specialty of medicine. At the same time he does not feel that there is any sufficient reason why the student who proposes to practice dentistry should be obliged to submit to the entire discipline of the medical course before taking up his special dental studies. At the beginning of the nineteenth century there was no dental profession. The development of anesthesia, asepsis, the x-rays and American dental technique have been primarily responsible for its advance. Finally, the emphasis on the conception that the teeth are just a part of the human body cannot be treated separately from an understanding of the body as a whole is fundamental to the practice of modern scientific dentistry. The most recent step has, of course been the emphasis on diet in relationship to the care of the teeth and on the development of clinics for prophylactic dentistry. In considering the future of dentistry, Dr. Miner feels that the need for dentistry is becoming more acute, since more people are beginning to realize its value. He feels that it must come eventually to complete equality with other medical specialties.

The Ape and the Child A Study of Environmental Influence Upon Early Behavior By W. N. Kellogg Associate Professor of Psychology Indiana University and L. A. Kellogg Cloth Price \$3 Pp 311 with 100 Illustrations New York & London Whittlesey House McGraw Hill Book Company Inc 1933

The authors of this work undertook in order to study the physiology and psychology of an ape as compared to a child to take into their home a young chimpanzee and to rear it coincidentally with the rearing of a young child. They made careful observations of the ape's habits, its methods of learning and the limitations on its abilities as compared to those of the child, finally bringing forth in their conclusions the advantages in favor of the child, the advantages in favor of the ape and the likenesses between the two. The book is a valuable contribution in the field of comparative psychology and anthropology.

Nahrungsmittel Tabelle zur Aufstellung und Berechnung von Diät verordnungen für Krankenhaus Sanatorium und Praxis Von Dr. Hermann Schall Leitender Arzt des Kindersanatoriums und des Erholungsheims Westend für Erwachsene Königsfeld (Badischer Schwarzwald) Tenth edition Paper Price 5.40 marks Pp 126 Leipzig Curt Kabitzsch 1932

This is a tabular arrangement now in its tenth edition of all the foods eaten by man with their contents of protein, fat, carbohydrates, calories, sodium chloride, purine bases and water, also tables of age, weight and height with caloric requirements, tables of equivalents, vitamins, minerals and similar data. Indeed, one finds here most of the necessary information concerning all the various food substances.

Towards Mental Health The Schizophrenic Problem By Charles M. Frueh Camp II Cloth Price \$1.25 Pp 110 Cambridge Harvard University Press 1933

These three lectures were the Adolph Gehrman lectures in hygiene at the University of Illinois College of Medicine in 1932. The lectures include a consideration of the general field and special territory, the harmonizing of conflicting trends and questions of heredity and environment. For purposes of publication the author has added a summary. In this summary the author emphasizes the importance of maintaining the well being of the organism not only through attention to its physical aspects but also by adjustment of its conflicting tendencies and encouragement to the attainment of an independent personality.

Psychoanalysis and Medicine A Study of the Wish to Fall Ill By Karin Stephen M.A. M.R.C.S. L.R.C.P. Cloth Price \$2.00 Pp 238 New York Macmillan Company Cambridge England University Press 1933

This volume is concerned particularly with the wish to fall ill—in other words, the psychologic basis for illness which frequently results in physiologic and pathologic manifestations. The basis for such illness is obviously conflict and repression. The manifestations, however, relate apparently to the sexual nature of the unconscious and to various methods of obtaining pleasure through bodily organs. The concluding chapter deals with defense mechanisms and with the use of transference in treatment.

Grosse Ärzte Eine Geschichte der Heilkunde in Lebensbildern Von Dr. med. Henry E. Sigerist Professor an der Johns Hopkins Universität in Baltimore Maryland Second edition Cloth Price 10 marks Pp 316 with 69 Illustrations Munich J. F. Lehmann 1933

This is an enlarged edition of the author's work on famous physicians, in which he gives the biographies of some fifty important medical men from Imhotep to William Osler. The volume is available also in English.

Health and Environment By Edgar Sydenstricker Cloth Price \$2.00 Pp 217 with 70 Illustrations New York & London McGraw Hill Book Company Inc 1933

This volume is a reprint of the chapter on the same subject in the book called Recent Social Trends in the United States. It has long been recognized by physicians that climate, nutrition, housing, occupation and similar factors were exceedingly important in relationship to the causation of disease. As a distinguished statistician long associated with the United States Public Health Service, Dr. Sydenstricker has had much opportunity to investigate the definite influences of such factors. So convinced was Dr. Sydenstricker of the importance of such influences that he expressed in his minority opinion on the Report of the Committee on the Costs of Medical Care the view that the report was inadequate because it failed to touch

the basic problems involved. He conceives of all disease as being the result of heredity and environment, and his tendency is to assign far more importance to environment than to heredity in the causation of illness. However, the environmental factors affect chiefly the people in the younger groups and have little effect on those of advanced years.

Medicolegal

Mandamus to Compel Municipal Judge to Enforce Sentence Against Chiropractor—In the municipal court of Toledo in March 1930 twenty-two persons were charged with practicing a limited branch of medicine and surgery—namely, chiropractic—without licenses. One of them Mueller was tried and it was agreed that the others would abide by the result of his trial. Mueller was found guilty and sentenced to pay a fine of \$25 and costs. On appeal the court of common pleas reversed the judgment. Eventually Mueller's case came before the Supreme Court of Ohio, where his conviction was affirmed. The judge of the trial court then found all the remaining defendants guilty and sentenced each one to pay a fine of \$25 and costs. Seven other chiropractors were found similarly guilty and sentenced in like manner. The trial court, however, suspended the execution of the sentences that it had imposed. On the petition of the secretary of the state medical board the court of appeals, Lucas County, granted a writ of mandamus directing that the orders of the court below suspending the execution of the sentences be set aside. The defendant chiropractors thereupon appealed to the Supreme Court of Ohio.

We are of the opinion said the Supreme Court that mandamus is the proper remedy by which to compel a court to set aside and vacate an order suspending the execution of a sentence made in a criminal case where the court has exceeded its authority in making the order. There is said the Supreme Court no statutory authority justifying the suspension of the execution of sentences previously imposed by a court on conviction of violation of a state law except as may be necessary to enable the defendants to perfect appeals or to be placed on probation. A municipal court has no inherent authority to suspend the execution of such sentences. The orders made by the municipal court of Toledo suspending the execution of the sentences it had imposed were without authority in the first instance and were therefore void. Being void they could be set aside at any time or stricken from the record and treated as a nullity and the original sentences enforced. The judgment of the court of appeals was therefore affirmed.—*Municipal Court of Toledo v. State ex rel. Platter (Ohio) 184 V. E. J.*

Accident Insurance, Death from Septicemia, Injury and Infection Not Necessarily Simultaneous—This was an action on an insurance policy. The insured accidentally pricked her thumb with a pin Friday April 18. The puncture caused by the pin remained visible. The soreness increased and the thumb became red. On the Monday following, the injury the insured was unable to work because of the pain in her thumb, and on admission to a hospital it was found that the pain was due to infection. She died on Friday one week after the day of the accident. Medical testimony tended to show that the germs that caused the infection could not have entered the thumb in the absence of an open sore or wound and that infection and blood poisoning was a natural result of the injury which the insured had received. The insurance policy covered effects resulting directly and exclusively of all other causes from bodily injury sustained through external violent and accidental means. It excluded disability due wholly or in part to disease or bodily infirmity. The trial court directed a verdict in favor of the defendant on the theory that the plaintiff could not recover under the policy because she had not proved that the pin and the germs entered the thumb or the deceased at the same time and that therefore he had failed to show that death was caused directly and exclusively by accidental means and was not due wholly or partly to disease. The plaintiff appealed to the Supreme Court of Rhode Island.

The Supreme Court quoted with approval from *Delaney v Modern Accident Club*, 121 Iowa 528, 97 N W 91, 63 L R A 603, in which the insured, following a cut on one of his fingers, died from blood poisoning and erysipelas.

It seems to us however that it is wholly immaterial when or how these specific bacilli which caused the disease known as blood poisoning which resulted in the death of Delaney were introduced into the wound whether at the time it was inflicted or subsequently. Blood poisoning is a disease just as many other pathological conditions of the human system.

The simple question is whether the death of Delaney resulted through natural causes without the interposition of a new and independent cause from the cut on his finger. Disease brought about as the result of a wound even though not the necessary or probable result yet if it is the natural result of the wound and not of an independent cause is properly attributed to the wound and death resulting from the disease is a death resulting from the wound even though the wound was not in its nature mortal or even dangerous.

The Supreme Court cited also *French v Fidelity & Casualty Co of N Y*, 135 Wis 259, 115 N W 869 17 L R A (N S) 1011, in which the insured died from blood poisoning following an abrasion of the skin on one of his legs. In that case on behalf of the insurer, it was argued that the injury was too slight to cause death and that death was due to an intervening cause, namely the germs which entered the body through the wound. But the court said:

It must be apparent however that but for the accidental injury there would have been no cause for infection but for the abrasion the disease germs could not have entered and produced the fatal result. The wound produced by the accident was therefore the proximate and sole cause of death.

The Supreme Court of Rhode Island therefore sustained the plaintiff's exception to the direction of a verdict in favor of the defendant and remitted the case to the trial court for a new trial—*Pennine v Peerless Casualty Co* (R I) 164 A 32.

Malpractice Negligence in Treatment of Cancer by Escharotics—The plaintiff entered Dr Nichols Sanatorium to be treated for two 'lumps' in her right breast and one in her right axilla. A nurse diagnosed her case as cancer and applied an escharotic mixture containing butter of antimony and zinc chloride. The flesh killed by the applications of this mixture was removed by the nurse, with surgical scissors and a curet. The entire right breast and a large part of the flesh in the axilla were thus removed before the plaintiff left the sanatorium. About fourteen months after leaving she returned for treatment for another lump in her right axilla. The second course of treatment left her right arm useless in the healing process the flesh united her arm to the side of her body and when she attempted to move her arm the scars cracked and bled. At the sanatorium she was told that her condition could not be remedied. She then went to a physician who performed a Wolfe graft operation, which greatly improved her condition. She sued the defendant sanatorium, alleging negligence and unskillfulness. The jury returned a verdict in her favor but the trial court ordered a new trial apparently on the theory that the evidence did not support the verdict. The Kansas City court of appeals affirmed the order of the trial court and the plaintiff appealed to the Supreme Court of Missouri.

There was ample testimony, said the Supreme Court to support the allegations in the plaintiff's petition that the defendant was negligent. If the plaintiff and the physician who performed the graft operation are to be believed the sanatorium discharged the plaintiff in a condition that rendered her practically an invalid for the remainder of her life and that condition could have been prevented or remedied at the sanatorium. There was substantial testimony too that the defendant sanatorium used a method of treatment that had been condemned by the medical profession. Under the evidence, the trial court properly submitted the case to the jury.

In the trial court the defendant sanatorium undertook to introduce the testimony of one of its nurses, to show that no more flesh was removed than was necessary to cure the disease condition. The trial court ruled however that the defendant might show what was done but that it could not introduce as evidence the opinion of this witness as to whether or not more flesh than was necessary was removed because that opinion was a mere conclusion and would invade the province of the jury. On appeal the defendant complained of this ruling. This witness, said the Supreme Court was not qualified as an expert with respect to matters concerning which she was to

testify. Her testimony was properly excluded. The fact that the trial court excluded it on the ground that it would invade the province of the jury, and not on the ground that the witness was not a qualified expert, was immaterial.

The judgment of the trial court awarding a new trial was accordingly reversed, with instructions to restate the verdict of the jury and enter judgment for the plaintiff—*Gates Dr Nichols Sanatorium (Mo)*, 50 S W (2d) 424.

Society Proceedings

COMING MEETINGS

American College of Surgeons Chicago October 9-13 Dr Franklin H Martin 40 East Erie Street Chicago Director General
American Public Health Association Indianapolis October 9-17 Dr Kendall Emerson 450 Seventh Avenue New York Acting Executive Secretary
American Society of Tropical Medicine Richmond Va Nov 1-11 Dr Henry E Meleney Vanderbilt University School of Medicine Nashville Tenn Secretary
Associated Anesthetists of the United States and Canada Chicago October 9-12 Dr F H McMechan 318 Hotel Westlake Rocky River Ohio Secretary
Association of American Medical Colleges Minneapolis Oct 30-Nov 1 Dr Fred C Zapffe 5 South Wabash Avenue Chicago Secretary
Central Society for Clinical Research Chicago Nov 3 Dr Lawrence D Thompson 903 University Club Building St Louis Secretary
Inter State Postgraduate Medical Association of North America Cleveland, Oct 16-20 Dr W B Peck 127 East Stephenson Street Freeport, Ill Managing Director
Oregon State Medical Society Portland Oct 26-28 Dr Albert W Holman 364 Washington Street Portland Secretary
Pacific Coast Society of Obstetrics and Gynecology Portland Oregon, October 19-21 Dr Clarence A DePuy 230 Grand Avenue Oakland, California Secretary
Southern Medical Association Richmond Va November 14-17 Mr C P Loanz Empire Building Birmingham Ala Secretary
Virginia Medical Society of Lynchburg Oct 24-26 Miss Agnes V Edwards 1200 East Clay Street Richmond Secretary

SECOND CONFERENCE ON RHEUMATIC DISEASES

Held under Sponsorship of the American Committee for the Control of Rheumatism Milwaukee June 12 1913

Degenerative (Hypertrophic) Arthritis

DRS CHESTER S KEEFER and WALTER K MYERS Boston
Our observations on anatomic changes in the knee joints show that degenerative (hypertrophic) arthritis increases with advancing age. What is true of the knee joint also applies to other movable joints of the body. Aside from age, other factors such as occupation gross injury to joint surfaces and static deformities influence the prevalence of degenerative arthritis. The anatomic alterations in the tissues can be explained on a basis of injury to the cartilage and bone which follows wear and tear of joint structures and an attempt on the part of the tissues to repair the injury.

DISCUSSION

DR J A KEY St Louis I agree with the authors on conclusions concerning the incidence of chronic arthritis in later life. The anatomic signs of degenerative (hypertrophic) arthritis are degeneration and erosion of cartilage and formation of osteophytes. Does this wearing out of a joint render it vulnerable so that it may become sore and painful? Many badly worn joints are not painful and other joints with relatively slight changes in bone are so painful that the patient walks with difficulty. Hypertrophic changes may be present in a joint for years and the patient never know it until some physician puts his hand on the crepitating knee and says: "Hear that? You have rheumatism." There must be alterations besides those in cartilage and bone. Did Dr Keefer and Dr Myers study the synovial tissues also?

DR RUSSELL A HADEN Cleveland I wish to know what the authors think of infection and other agents as accelerating factors in this disease.

DR RALPH PEMBERTON Philadelphia Dr Goldhaft and I have been carrying out studies on the influence of ligation of patellar vessels in young and old dogs and have noticed apparently marked differences in the two groups. Whereas in older dogs changes develop that are rather characteristic of

hypertrophic arthritis, in younger dogs much less overgrowth develops, sometimes none. This seems to corroborate the views of some observers to the effect that the kind of response which the tissues yield is conditioned, at least in part by the age of those tissues.

DR C S KEEFER, Boston. We are all interested in what produces symptoms in cases of degenerative (hypertrophic) arthritis. Only about 7 per cent of the patients complained of any pain referable to the joints; we too have looked for factors other than anatomic changes in an attempt to explain symptoms. In some cases infarcts in synovial tissue may produce hemorrhage and cause pain but I cannot say why many patients with extensive changes have no pain. We studied the synovial tissue in all these cases; in 65 per cent it glistened with smooth layers of cells without evidence of inflammation. In some cases we found thickening and hypertrophy of synovia with perivascular round cell reaction. This may be evidence of inflammation and it may or may not play a part in producing symptoms referable to the joints. There is no doubt that accelerating factors play an important part in determining the final changes in joints. Age, infection, gross and occupational trauma, hemorrhage, and static defects are of the highest importance. We have not been able to find any correlation between the degree of arteriosclerosis present and the extent of the anatomic changes. We have frequently found advanced arteriosclerosis of the blood vessels about the joints and few anatomic changes. In other cases, extensive alterations in the bone and cartilage are seen with normal blood vessels.

Joint Tissue Changes in Chronic Atrophic (Rheumatoid) Arthritis

DR R K GHORMLEY, Rochester, Minn. From the standpoint of pathology, the nomenclature of Nichols and Richardson is more satisfactory than any other terminology. Much more effort should be made to study pathologic material in cases of arthritis. In a study of pathologic changes in joints attention must be given to three aspects: changes in synovial membrane, in cartilage and in bone. The changes in synovial membrane are those most often studied for these tissues are more easily obtained. It is seldom possible to obtain bone or cartilage. All are familiar with the thickening of the synovial membrane and the formation of villi or overlapping folds. The folds are filled with cells of two main types: fibroblasts or young connective tissue cells and lymphocytes or small round cells. Later, if circulation becomes established, definite new blood vessels are seen. These blood vessels however seldom have thickened walls. The small round cells are collected in nests, in some of which are central areas composed of larger cells which at times contain mitotic figures. In many ways these suggest a specific reaction of local cells to some outside stimulus.

The cartilage is overgrown and invaded by a pannus from the synovial membrane. Coincidentally subchondral invasion takes place probably from bone marrow. These two processes going on simultaneously ultimately produce extensive destruction of cartilage. If this destruction has gone on to the extent that bare cancellous bone comes in contact with cancellous bone ankylosis usually occurs. The changes in bone are less well recognized because bone is very difficult to obtain in these cases except when joints are resected and they seldom are resected in the early stages. However one may see these changes in bone marrow—that is, collections of small round cells in foci. Atrophy of trabeculae also takes place to a variable degree.

DISCUSSION

DR R A KINSELLA, St. Louis. Dr Ghormley's work goes considerably further than that of Nichols and Richardson. Here is evidence tending to corroborate the old idea that arthritis deformans and rheumatic fever are related diseases. If the microscopic picture Dr Ghormley presented in cases of atrophic arthritis were compared with that of lesions in other parts of the body in acute rheumatic fever the resemblance would be striking.

DR M H DAWSON, New York. I have recently examined tissues from several patients with early atrophic (rheumatoid) arthritis and invariably found the changes Dr Ghormley has described. I have also examined sections of synovial tissue from patients with orthodox rheumatic fever and have found

remarkable similarity in the lesions in the two diseases. In certain instances it is practically impossible to tell the lesions apart.

DR L D SMITH, Milwaukee. Did Dr Ghormley frequently find semifluid, necrotic material in those knees?

DR J A KEY, St. Louis. It is interesting to see in what respects the pathologic changes in rheumatoid arthritis are comparable to those in tuberculous arthritis. The fact that tuberculous, pyogenic and gonorrheal arthritis are all known to be infectious diseases argues strongly for the infectious nature of other forms of chronic arthritis. Although I have been unable to confirm the work of those who obtained bacteria by culture, either from blood or from joints in chronic arthritis, I cannot get away from the idea that it is an infectious disease because the pathologic changes resemble somewhat those of known infections in joints. For years I have searched sections stained for bacteria but never have found them. Did Dr Ghormley make a search for bacteria?

DR R K GHORMLEY, Rochester, Minn. I am much interested in the statements regarding the changes in rheumatic fever. We had no such cases. We had very little success in demonstrating organisms in the joints. Dr Zinsser examined many of these joints but found no pathologic organisms. But what is an infection of joints? Is it the effect of bacteria in the joint itself or is it the chemical changes resulting from bacterial growth elsewhere producing changes in joints? That cannot be touched on until more is known about the chemistry of the process.

Physiology of Normal Joints as Related to Rheumatoid (Atrophic) Arthritis

DR WALTER BAUER, Boston. In our clinic we have continued studies on anatomy and physiology of normal joints, believing that more complete knowledge of the normal eventually will lead to better understanding of how the proliferative changes of rheumatoid (atrophic) arthritis are brought about. These studies are of necessity being carried out on animals. As a result of cytologic and chemical studies on synovial fluid obtained from young cattle we can define normal synovial fluid with some degree of certainty. It contains on an average 132 nucleated cells. Erythrocytes are not present. Comparison of the concentration of certain nonelectrolytes in synovial fluid and arterial blood shows that they are practically identical. For this reason and others based on data obtained from this study, we believe that synovial fluid is probably a simple diffusate coming from the rich subsynovial blood supply.

In order to obtain information relative to the interchange of fluids in joints we determined the manner of removal of proteins from joints of dogs. The proteins contained in egg white and horse serum were removed only by way of the lymphatic channels and more rapidly if the joints were passively exercised. The smaller molecule horse serum albumin was readily removed from a normal dog's knee joint, whereas the larger molecule horse serum globulin, escaped with difficulty, if at all, and therefore did not readily gain entrance into the subsynovial lymphatic capillaries. Such information should add to our understanding of the mechanism of effusions in joints. An effusion can result from too rapid formation of synovial fluid from interference with removal of proteins or from a combination of the two. Application of this knowledge is being made in the clinic and undoubtedly will aid in understanding and treating disease of the joint.

DISCUSSION

DR J A KEY, St. Louis. When an effusion occurs in a joint there is a change in the synovial membrane accompanied by blockage in absorption from the joint. A similar blockage accompanies pleurisy. I hope to conclude experiments to determine the rate of absorption from joints in which a low grade synovitis had been produced. Has Dr Bauer done this?

DR WALTER BAUER, Boston. Dr Key is a jump ahead of us. We have wanted to do such work but time has not permitted. At present my associates and I are carrying out experiments with joint effusions in an effort to determine which of three factors is at fault: (1) increased formation of synovial fluid, (2) interference with lymphatic drainage or (3) a combination of the two.

Studies on Rheumatoid Arthritis

DRS M H DAWSON and R H BOOTS, New York. It is our belief that rheumatoid (atrophic) arthritis and osteo arthritis (hypertrophic arthritis) represent two distinct processes, entirely diverse in etiology, possessing little if anything in common in pathologic anatomy, demanding a widely different therapeutic approach, and resembling each other in the single characteristic that both disorders primarily involve the structures of the joints. Contrary to the results of other investigators, we have not been able to recover streptococci from the blood or tissues of patients with rheumatoid arthritis. Serum from 321 patients with rheumatoid arthritis, and from 371 controls, have been examined. Agglutination reactions with living coccal organisms must always be done at a temperature which kills the organisms, that is approximately 55 C. If heat-killed organisms are employed, a temperature of 37 C is permissible but agglutination reactions with living coccal forms at 37 C are entirely without significance. Usually the serum from patients with rheumatoid arthritis agglutinates hemolytic streptococci in high titers but does not agglutinate other organisms in any significant titer. Serum from controls and from patients with osteo arthritis does not give positive agglutination.

Precipitin tests carried out with both protein and carbohydrate fractions of *Streptococcus haemolyticus*, serum from 100 patients with rheumatoid arthritis being used and 600 controls suggested that both the agglutination and precipitation reactions are specific. More than 2,000 observations on the sedimentation rate of erythrocytes of several hundred patients were made. In rheumatoid arthritis the rate paralleled to an extraordinary degree the severity and extent of the arthritic process. In active cases it was usually greatly elevated generally more than 30 mm in an hour. The test offered a convenient method of evaluating the results of therapeutic measures and was useful as an aid in distinguishing rheumatoid arthritis from osteo-arthritis. The rate was normal in cases of myositis neuritis and fibrositis.

During the last four years several hundred patients with rheumatoid arthritis have been treated with small and large doses of different vaccines variously administered: autogenous vaccine subcutaneously, streptococcus antigens, typhoid vaccines, and vaccines from strains of streptococci subcutaneously and intravenously. It is our belief that the value of vaccine therapy in the treatment of rheumatoid arthritis has not been proved. The sedimentation rates are not favorably influenced and patients on other treatment than vaccines improve equally well. There seems to us no justification for the use of vaccines as a routine in the treatment of osteo-arthritis. Immunologic evidence confirms the clinical impression that rheumatoid arthritis is a clinical entity and suggests that it is associated with infection by *Streptococcus haemolyticus*.

DISCUSSION

DR MACNIDER WETHERBY, Minneapolis. It is difficult to ignore the significance of the isolation of streptococci from the blood cultured from hundreds of patients with chronic arthritis by such investigators as Moon and Edwards, Richards, Hadjopoulos and Burbank, Cecil, Nichols and Stainsby, Klugh, Gray and Gowan, Clawson and Wetherby, Straus, Ashworth and Traut. A number of these investigators have found streptococci in the blood of 50 per cent or more of patients and have run 'blindfold control' cultures with negative results. It is also true that others including Nye and Waelbaum, Bernhardt and Hench and Dawson, Olmsted and Boots have not found streptococci in blood cultures, however, it seems not unlikely that minor differences in technique might account for such negative results. There have likewise been a number of reports of the isolation of streptococci from joint fluid, joint tissues, regional lymph nodes and subcutaneous nodules in chronic arthritis. The organisms found have chiefly been classified as *Streptococcus viridans* with respect to their effect on blood agar. There has also been evidence tending to show that diphtheroid organisms isolated may often represent pleomorphic forms of streptococci. Cecil and his co-workers, however, have termed the organism most frequently isolated an atypical hemolytic strain although they have classified some as *Streptococcus viridans*. Cecil sent us one of his isolated strains which he considered an atypical hemolytic strain. Following Brown's

classification of streptococci in blood agar Cecil's A B 13 strain might be termed "alpha prime." Most of the strains isolated by us from either the blood or subcutaneous nodules would be classified as viridans or alpha, although a few would be classified as alpha prime, and in a few cases as true beta strains. The results from culture have seemed of greater etiologic significance than have been results from agglutination tests. Dawson and Boots have presented data in their agglutination and precipitin tests tending to show in blood from patients with chronic arthritis an elevation of agglutination titers with hemolytic streptococci. They have not found much agglutination proper against *Streptococcus viridans*. It may be that the strains of viridans used were not as sensitive to agglutination as were the hemolytic strains. Clawson and I have run many hundreds of agglutination tests on controls and on children with rheumatic fever, on adults with chronic arthritis, and on patients with chronic glomerulonephritis and scarlet fever. We have used two strains, Cecil's A B 13 (from the blood of a patient with chronic arthritis) and a strain of *Streptococcus viridans* (alpha) which was isolated by Clawson from the blood of a patient with chronic rheumatic fever and pericarditis. The strain of viridans which we have used is sensitive to agglutination and, in our series, testing agglutination with these two strains, we have found that the blood from patients with clinical rheumatic fever and chronic arthritis ran a moderately higher range than that from normal controls but that our patients with glomerulonephritis and scarlet fever ran much higher titers than any of the other groups. We were unable to find any evidence for specificity of strain. Animals that have been immunized with intravenous injections of this strain of viridans, so that the agglutination titer of their blood was significantly raised, have likewise agglutinated Cecil's strain A B 13 at a very high level. We do not believe that the action of a streptococcus on blood agar necessarily places that strain in a sharp biologic group. There is no doubt that minor technical differences greatly influence agglutination determinations in different laboratories. We have not found that the temperature of the water bath at 55 C has given any more specific results than when run at 40 C, with living organisms, but we have found that the dilution of the suspension is of great importance in influencing the dilution in which agglutination was demonstrable at either temperature with these two strains. We have been unable to place the majority of our patients in such distinct groups as rheumatoid arthritis and osteo arthritis, on a clinical, bacteriologic, pathologic or roentgenologic basis, and we share the view of McRae, Rolleston and Timbrell Fisher on that point. It is to be hoped that at some future time a greater effort will be made to use an etiologic terminology for disease of joints, possibly using such terms as streptococcic, gonococcic and tuberculous arthritis, and traumatic and senescent diseases of the joints. We have at present about 1,500 patients with chronic arthritis who have received streptococcus vaccine intravenously. About 80 per cent of such patients have believed themselves definitely benefited within a few months after beginning treatment, experiencing decrease in pain and swelling, and increase in motion of joints. There are of course definite limitations placed on possible benefits from vaccine therapy in cases in which severe permanent injury of joint tissues has taken place. One must be most careful in evaluating results in such a disease as chronic arthritis with its periods of spontaneous remission and exacerbation. The clinical results, however, have seemed too encouraging to be explained by chance or by overenthusiasm. Based on Clawson's experimental work on animals we do not believe that subcutaneous or intramuscular vaccination is comparable with vaccination by the intravenous route.

DR J L MILLER, Chicago. Did the authors make agglutination tests on patients with infectious spondylitis? Fischer has reported a number of these cases in which the patient also had rheumatoid arthritis affecting the extremities. He expressed the belief that infectious arthritis is rheumatoid arthritis of the spine.

DR M H DAWSON, New York. We have felt that infectious spondylitis is simply a variety of rheumatoid arthritis. May I ask Dr Wetherby whether his agglutination tests were done at 37 or at 55 C. In our experience that makes a very considerable difference.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

52 153 332 (March 15) 1933

- Differences in Testis Injury and Repair After Vitamin A Deficiency Vitamin E Deficiency and Inanition K E Mason Nashville Tenn —p 153
- Time and Order of Appearance of Ossification Centers in Albino Mouse Myra L Johnson Northampton Mass —p 241
- Further Observations on Living Lymphatic Vessels in Transparent Chamber in Rabbit's Ear Their Relation to Tissue Spaces E R Clark and Eleanor Linton Clark Philadelphia —p 273
- Studies on Anterior Hypophysis I Development of Hypophysis in Pig (Sus Scrofa) II Cytologic Differentiation in Anterior Hypophysis of Fetal Pig W O Nelson Chicago —p 307

52 333 518 (May 15) 1933

- Susceptibility of Omentum of Rabbits to Single Erythema Dose (400 R) of Roentgen Rays N A Michels Philadelphia —p 333
- Allantochoionic Differentiations of Pig Studied Morphologically and Histochemically C E Brambel Baltimore —p 397
- Studies in Sex Differentiation and Sex Determination in Amphibians VI Nature of Bidder's Organ in Toad E Witschi Iowa City —p 461

52 519 616 (May 15) 1933 Supplement

- Sexual Cycle in Human Female as Revealed by Vaginal Smears G N Papanicolaou New York —p 519

American Journal of Clinical Pathology, Baltimore

3 181 262 (May) 1933

- Blood Picture in Pneumonia with Especial Reference to Pathologic Changes in Neutrophils N Rosenthal and C J Sutro New York —p 181
- The Autopsy Outline of the Problem I Davidohn Chicago —p 199
- The Pathologist's Duty in Obtaining Permission for Autopsy W Freeman Worcester Mass —p 211
- *Primary Tumors of the Liver O A Brines Detroit —p 221
- Cytology of Endometrium C G Bain Seattle —p 237
- Capillary Weakness in Bacterial Asthma B J McCloskey Johnstown Pa —p 243

Primary Tumors of the Liver—Brines encountered eight cases of primary carcinoma of the liver in 1087 consecutive necropsies. Six of these were hepatomas and two cholangiomas. The patients were the type usually encountered in a charity hospital. Alcoholism and syphilis appear to play a minor etiologic part. While cirrhosis was associated with only one of these cases (a hepatoma) the author makes no attempt to dispute the reported relationship between cirrhosis and primary carcinoma of the liver in the experience of others. The two cases of secondary melanoma of the liver illustrate that probably most primary melanomas of the liver which have been reported are only apparently primary there. He believes that diagnoses of primary sarcoma of the liver should be viewed with suspicion on the ground that many so diagnosed are of epithelial origin. A much higher percentage of primary carcinoma of the liver is apparently found in necropsies on patients in whom chronic hepatic diseases are prevalent. The gross appearance of hepatomas is not especially helpful in identifying the lesion but the histopathologic picture is fairly distinctive and a positive microscopic diagnosis can usually be made.

American Journal of Physical Therapy, Chicago

10 136 (June) 1933

- Some Uses of Static Electricity R Cressy London England —p 5
- Value of Physiotherapy in Visiting Nurse Organization Helen King Detroit —p 9
- Treatment of Recent Injuries by Vigorous Physiotherapeutic Methods W E Tucker London England —p 10
- Low Voltage Currents and Some of Their Uses G A Remington Chicago —p 14
- Physiologic Effects of Physiotherapy P A Montville Canandaigua N Y —p 16
- Importance of Iron-Copper Ratio in Nutrition D F Lane —p 18
- Treatment of Expectant Mothers by Ultraviolet Irradiation Nancy Kathleen Childs Cardiff Wales —p 27

Annals of Surgery, Philadelphia

97 801 972 (June) 1933

- Electrosurgery Clinical Report on One Hundred and Eighteen Operations H Lilienthal New York —p 801
- *Diagnosis and Operative Control of Acute Pyogenic Phlebitis Complicated by General Septic Invasion H Neuhof New York —p 808
- *Multiple Myeloma Simulating Hyperparathyroidism H D Caylor and A C Nickel Bluffton Ind —p 823
- Anomaly of Inferior Laryngeal Nerve G D Williams St Louis —p 828
- Amount of Cland to Be Left at Thyroidectomy A G Brenizer, Charlotte N C —p 831
- *Skin Conservation in Radical Mastectomy for Carcinoma L Friedman New York —p 844
- Observations on Rupture of Supraspinatus Tendon Based on a Study of Seventy Three Cadavers E L Keyes St Louis —p 849
- *Primary Jejunal Ulcer W W Ebeling Philadelphia —p 857
- Results of Medical and Surgical Treatment of Peptic Ulcer R K Felter and S Weintraub New York —p 875
- Clinical and Pathologic Factors Influencing Ultimate Prognosis Following Resection for Carcinoma of Stomach H K Gray Rochester Minn —p 882
- Inflammatory Tumors of Gastro Intestinal Tract J H Morris New York —p 889
- Primary Mucoid Carcinoma of Rectum in Thirteen Year Old Girl T S Raiford Baltimore and E M Buttlers Burlington Vt —p 905
- Ectopic Chorionepithelioma Report of Case in Which Lesion Was Situated in Jejunum J B Sears Boston —p 910

Acute Pyogenic Phlebitis—Neuhof states that because phlebitis associated with general surgical infections spreads rapidly and often results in death from septicemia, the indication for operation is urgent. An operative treatment for pyogenic phlebitis complicated by general septic invasion must be based on a plan for complete elimination of that focus. Proximal ligation of the vein should be considered a temporizing method. The technic of operation is based essentially on liberal exposure of the vein at the site of phlebitis or suspected phlebitis. Special attention should be given to adequate exposure proximal to the end of the lesion, because excision is to be performed beyond the limits of the phlebitis. Either a serrefine or a temporary ligature is placed on the proximal portion of the vein before dissection of the vein is carried out. A plane of cleavage between the vein and the surrounding tissues can always be found and the microscopic alterations in the vein do not extend far beyond the visible and palpable site of the lesion. When phlebitis without evident thrombosis is encountered the microscopic examination reveals a diffused infection of the wall of the vein with minimal or no thrombosis. Infection may be present to the same degree when the vein appears normal as at the site of visible phlebitis. Excision or incision or any other effort at immediate elimination of the focus cannot be advocated in the treatment of phlebitis without thrombosis.

Multiple Myeloma—Caylor and Nickel present data concerning a patient afflicted with multiple myeloma which in many respects simulated hyperparathyroidism. The correct diagnosis was made after biopsy. The authors believe that occasionally neoplastic diseases may be associated with a hypercalcemia although hypocalcemia is the rule. Their observations and those of Mason and Shields suggest that when a hypercalcemia and malignant disease coexist the phosphorus content of the blood serum is within the normal limits. From their study it would seem that the phosphorus content of the blood serum in hyperparathyroidism is of equal importance with the calcium content.

Skin Conservation in Mastectomy—According to Friedman an ideal breast incision for carcinoma should permit easy access to the axillary space so that thorough removal of axillary lymph nodes and fat can be accomplished. It should permit closure of the wound without undue tension without the necessity of skin grafting or of a granulating area and it should leave a fairly presentable linear scar. This can be accomplished by conserving and utilizing the skin covering the breast farthest away from the tumor depending on its size and location. Dividing the breast into quadrants since tumors can be so classified the skin is to be conserved by dissecting it off the side of the breast not containing the mass, thereby the amount of integument gained will be from 2 to 3 inches in width extending the entire half of the diameter of the breast and the closure of the wound will be much more easily obtained with the least degree of tension. In many instances the outline of the skin incision can be carried up to the areola or the nipple but it should never include the nipple or its areola particularly

when there is nipple retraction. By gaining from $2\frac{1}{2}$ to 3 inches of skin area, it will not be necessary to undermine the skin beyond the circumference of the breast. Even in cases presenting a comparatively large tumor mass a considerable area of the skin can be safely dissected off the normal side of the breast. Retention sutures are usually not required.

Primary Jejunal Ulcer—Ebeling points out that the recognition of simple ulceration of the jejunum depends on the history of dyspepsia and gastric distress with symptoms not unlike those of peptic duodenal ulcer and occasionally, of subacute obstruction of the upper part of the jejunum. The location of the ulceration may be determined by serial roentgen studies of the gastro-intestinal tract. The majority of primary jejunal ulcers manifest themselves by acute perforation. The diagnosis of perforated ulcer of the jejunum may be made from the history of a sudden onset of pain with fulminating signs and symptoms of peritonitis, whether or not there is a previous history of ulcer. The use of the roentgenoscope is recommended for its value in the demonstration of air under the dome of the diaphragm in the presence of a perforated jejunal ulcer as it is for a similar perforation of a duodenal or gastric ulcer. The mortality may be lowered by early surgical intervention. Pain or obstructive symptoms with localization of the lesion to the jejunum should be treated surgically.

Archives of Internal Medicine, Chicago

51 819 994 (June) 1933

Mechanism of Edema of Renal Type—Study on Basis of Changes in Water Content of Blood and in Protein Content of Blood Plasma During Cycle of Edema in Children. W. B. McClure, Carol Beeler de Takats and W. F. Hinman. Chicago—p. 819.

Congestive Heart Failure and Angina Pectoris—Therapeutic Effect of Thyroidectomy on Patients Without Clinical or Pathologic Evidence of Thyroid Toxicity. H. L. Blumgart, S. A. Levine and D. D. Berlin. Boston—p. 866.

Nature of Skin Reactions Produced by Heat Inactivated Poliomyelitis Virus—Reaction of Persons Convalescing from Poliomyelitis and of Normal Persons to Intracutaneous Injections of Heat Inactivated Virus. A. B. Salin, W. H. Park and C. W. Jungblut. New York—p. 878.

Excretion of Nitrogen by Obese Patients on Diets Low in Calories—Containing Varying Amounts of Protein. R. W. Keeton and Dorothy Dickson. Chicago—p. 890.

Histamine Test Meals—Analysis of Nine Hundred and Eighty Eight Consecutive Tests. W. S. Lolland. San Francisco—p. 903.

Peptic Ulcer—VIII. Results of Medical and Surgical Treatment of Patients in Rural Districts and in Small Towns. C. B. Morton. University. Va.—p. 920.

Effect of Stimulation of Visceral Nerves on Coronary Flow in Dog. Josephine Hinrichsen and A. C. Ivy. Chicago—p. 932.

Auricular Flutter with Complete Auriculoventricular Block in a Patient with Coronary Disease. A. E. Parsonnet and S. Parent. Newark, N. J.—p. 938.

Standardization of Chest Leads and Their Value in Coronary Thrombosis and Myocardial Damage. A. M. Hoffman and E. DeLong. Los Angeles—p. 947.

Electrocardiographic Studies of Dying Human Heart with Observations on Intracardiac Injection of Epinephrine. Report of Twenty Five Cases. J. F. Hanson, W. K. Purks and R. G. Anderson. Atlanta, Ga.—p. 965.

Diffuse Amyloidosis—Three Unusual Cases. Clinical and Pathologic Study. E. C. Bannick, J. M. Berkman and D. C. Beaver. Rochester, Minn.—p. 978.

Congestive Heart Failure and Angina Pectoris—Blumgart and his associates give reasons for believing that patients with a normal metabolism who suffer from congestive heart failure or angina pectoris might show striking improvement if the metabolic rate were significantly lowered. The hearts of such people might be unable to supply enough blood for the ordinary demands of a normal metabolic rate but nevertheless might be able to supply enough blood for a reduced metabolic rate. The authors report the results of producing a subnormal metabolic rate by thyroidectomy on three patients who were suffering from severe congestive heart failure but who showed no evidences of disturbed thyroid function, and on one patient with angina pectoris with a slight elevation of metabolism but with a normal gland. In two of the three patients with severe congestive heart failure subtotal thyroidectomy caused a fall in the metabolic rate which reached its maximum about three weeks after operation. The basal metabolic rates in these two patients again rose toward the preoperative normal level and their clinical conditions became less favorable. One of these patients continued for an additional month to show a somewhat lessened metabolic rate than before operation and his clinical condition while not as good as that

three weeks following operation, was definitely better than before operation. The patient suffering from angina pectoris has shown no recurrence of the attacks since subtotal thyroidectomy, although he has returned to work and active life. Before operation attacks of angina pectoris occurred even while he was at rest. In one patient with congestive heart failure complete ablation of all thyroid tissue was done the parathyroids being spared. This patient has maintained clinical improvement, and the metabolic rate has remained persistently lowered for more than six weeks. The procedure should be employed only in carefully selected cases in which all known therapeutic measures have proved ineffectual.

Histamine Test Meals—Pollard made an analysis of 983 consecutive histamine test meals. Of these patients 684 showed no evidence of disease, and standards of normal for gastric acidity and volume of secretion were derived from these data. The mean total acidity for men ranged from 101.1 units at the age of 25 to 67.1 units at the age of 65, and for women from 82.2 units at the age of 25 to 66.7 units at the age of 65. This included normal subjects who had anacidity. There was a definite correlation between age and acidity in men. The mean maximum ten minute volume of secretion for men ranged from 39.7 cc at the age of 25 to 24.9 cc at the age of 65. The mean volume of secretion for women ranged from 33.1 cc at the age of 25 to 21.7 cc at the age of 65. There was a definite correlation between age and volume in the two sexes. The total gastric secretion declined with age at about the same rate. There was a steady increase in the incidence of anacidity from youth to old age and at all age periods up to 60 the incidence was higher in women than in men. The incidence for the normal man was 10.7 and for the normal woman 14.1 per cent. In 130 cases of duodenal ulcer, 91.3 per cent of the patients had a total acidity and 79.2 per cent had volumes of secretion higher than the mean values of normal persons of the same age and sex. In 36 cases of gastric ulcer, 91.7 per cent of the patients had a total acidity and 75 per cent had volumes of secretion higher than the mean values of normal people of the same age and sex. In 56 cases of carcinoma of the stomach the incidence of anacidity was 69.6 per cent, only 1 patient had an acidity and 3 had volumes above the mean normal value for the same age and sex. Of the male patients with gastric ulcer and duodenal ulcer 87.1 and 92.5 per cent, respectively, had total secretions above the normal mean for age and 100 per cent of the male patients with carcinomas had total secretions below this mean. The author discusses the diagnostic value of the histamine test meal in differentiating benign from malignant lesions of the stomach. In a miscellaneous group of cases no evidence could be found that any particular disease, except pernicious anemia, was associated with a characteristic type of gastric secretion.

Auricular Flutter—Parsonnet and Parent report a case of auricular flutter with an unusually high auricular rate. This condition was superimposed over a complete dissociation of the auricles and ventricles in a patient who subsequently died with all the classic manifestations of coronary occlusion and infarction. Of singular interest was the rarity of such a combination of abnormal rhythms, the extremely high auricular rate, the rapid changes of axis in the various leads, the clear demonstration of flutter configuration in lead I and finally the typical T waves as seen in coronary disturbances.

Standardization of Chest Leads—Hoffman and DeLong believe that uniform tracings can be secured in normal patients when the electrode is placed in the following positions. The respective anterior and posterior positions of the electrode in position A are in the center of the chest at the level of the fifth to the sixth interspace and in the center of the back on a level with the anterior electrode. In position B, over the position of the maximum impulse of the heart and on the left side of the spine between it and the scapula at the level of the spine of the scapula. In position C on the left side of the chest over the second interspace about 2 to 3 inches from the midsternal line and at the same posterior site as in position B. In position D over the position of the maximum impulse and on the left side of the back below the angle of the scapula on a level with the anterior electrode. In position E in the center over the precordia and on the left side of the back on a level with the anterior electrode. The authors employed these positions

tions in obtaining electrocardiographic tracings in a series of 125 normal control cases and in a series of clinical cases of coronary thrombosis and other forms of myocardial damage. They state that by uniform technique and with care as to the position of the electrodes uniformly normal tracings can be secured on patients with normal hearts. In no instances did they obtain other results and only in diseased hearts did they obtain abnormal chest leads. The changes found in diseased hearts were not limited to patients with coronary thrombosis. These changes occurred in such patients in whom standard leads were either normal or abnormal. Apparently the changes in lead IV occurred at times before abnormalities arose in the standard leads. Frequently they reverted to normal before the abnormalities of the standard lead had done so. In a few instances they remained for many months presumably as evidence of residual myocardial damage long after the standard leads had become normal. In a small group with characteristic changes of coronary thrombosis in the standard leads, no abnormalities in the chest lead were noted. Abnormal chest leads were found in two instances of rheumatic heart disease with mitral stenosis (both with normal standard leads), and in one patient with syphilitic heart disease. The latter had normal standard leads. None of these patients had evidence of coronary disease post mortem. In one of the rheumatic hearts there was considerable adhesive pericarditis.

Archives of Pathology, Chicago

15 755 886 (June) 1933

Plastic Studies in Abnormal Renal Architecture. I. Two Architectural Units in Chronic Bright's Disease and Their Possible Functional Significance. Jean Oliver and Edna M. Lund. Brooklyn.—p. 755

*Tumors of the Suprarenal Gland. C. F. Geschickter. Baltimore.—p. 775
Methods for Microchemical Demonstration of Arsenic in Tissues. H. Tannenholz and Kathleen B. Muir. Chicago.—p. 789

Rat Carcinoma and Injected Colloidal Platinum. M. F. Guyer and F. E. Mohs. Madison Wis.—p. 796

Concentration and Precipitation of Bilirubin in Gallbladder and Bile Ducts. Experimental Studies on Cats and Dogs. A. W. Elton and E. Deutsch. Reading Pa.—p. 818

Water in Lungs of Drowned Animals. P. A. Karpovich. Springfield Mass.—p. 828

*Blood Diastase in Cancer. L. L. Turcotte. St. Louis.—p. 834
Cell Plasma Ratio and Estimations of Hemoglobin by Cell Concentration. J. I. Kushner. New York.—p. 843

Tumors of the Suprarenal.—Geschickter states that the cortical tumors of the suprarenals arise from small islands of undifferentiated mesenchymal tissue related in origin to the sex glands. These small embryonal islands can be found in normal suprarenals in the region of the capsule. When slowly proliferating these cells give rise to the benign cortical adenomas without marked clinical symptoms. When more rapidly proliferating they give rise to cortical carcinomas with clinical changes in the sexual characteristics of the patient. The medullary tumors of the suprarenals are of the nature of sympathetic nerve tissue or of chromaffin tissue both of which have a common origin in undifferentiated neurogenic tissue of the sympathetic type. The more slowly growing sympathetic nerve tumors give rise to ganglioneuromas or ganglionic sarcomas. The chromaffin tissue gives rise to chromaffin cell carcinomas and to paragangliomas. The more undifferentiated neurogenic tissue gives rise in childhood to the malignant sympathoblastomas and in adult life to the malignant sympathetic neuroblastomas. The neurogenic tumors may arise from undifferentiated cells of the suprarenal medulla or from outlying ganglions of the sympathetic nerves that supply this organ. The author presents an outline indicating the relation of these tumors.

Blood Diastase in Cancer.—Turcotte determined the diastase content of the blood at various times during the course of the illness in eighty-one patients with malignant disease. Marked fluctuations of the diastase level in individual patients could be observed at different times. Twenty-one of the patients had low blood diastase when first examined. Five of the six subsequently had a normal diastase value and sixteen or 78 per cent of those with low diastase died or were in a poor state of health. Fifty-four were found to have a normal content of diastase in the blood when they were first examined. Eight subsequently had a low blood diastase. About one-half of the patients with a normal content of diastase in the blood subsequently died or were in an unsatisfactory state of health at

the time of this report. Five patients had high blood diastase. Two of them had obstruction of the pancreatic duct, and in two the determinations were made shortly after radiation therapy. All these patients had died or were hopelessly ill subsequent to the time they were studied. A definite increase in the blood diastase was observed shortly after radiation therapy. This increase followed a latent period of some days during which no noticeable change in the diastase content of the blood could be detected. After an interval of from one to four weeks the blood diastase became normal in amount.

Archives of Surgery, Chicago

26 933 1128 (June) 1913

*Therapeutic Considerations in Management of Acute Intestinal Obstruction. Technique of Enterostomy and Further Account of Decompression by Employment of Suction Siphonage by Nasal Catheter. O. H. Wangenstein. Minneapolis.—p. 933

Mechanics of Scoliosis. S. P. Rogers. New York.—p. 962
Electrosurgical Incisions. Histologic Effects. J. D. Ellis. Chicago.—p. 981

*Infection Involving the Ethmoid Maxillary and Sphenoid Sinuses and Orbit Due to *Aspergillus Fumigatus*. Report of Case. A. F. Adams Jr. Baltimore.—p. 999

Duodenal Diverticula. Anatomic Study with Notes on Etiologic Role Played by Dystopia of Pancreatic Tissue. B. T. Horton and Selma C. Mueller. Rochester. Minn.—p. 1010

*Unilateral Spine Fusion. Simplified Technique. S. Kleinberg. New York.—p. 1035

*Plastic Operations for Incontinence of Urine and of Feces. P. B. Price. Tsinan. China.—p. 1043

Gynecomastia. J. G. Menville. New York.—p. 1054

Duodenal Ileus. Effect of Chronic Duodenal Obstruction on Evacuation of Gallbladder. P. F. Shapiro and H. H. Krasabach. New York.—p. 1084

Peritonitis. Effects of Administration of Salt Solution on Amount of Fluid That Accumulates in Peritoneal Cavity. A. Blalock. Nashville. Tenn.—p. 1098

Experimental Peritonitis. Role of Welch Bacillus. A. C. David and M. Loring. Chicago.—p. 1103

Diverticulitis of Colon in Women. H. R. Huston. Dayton. Ohio.—p. 1111

Fiftieth Report of Progress in Orthopedic Surgery. J. G. Kuhn. E. F. Cave. S. M. Roberts and J. S. Barr. Boston. J. A. Freiberg. Cincinnati. J. E. Milgram. New York. G. Larkins. London. England. and P. D. Wilson. Boston.—p. 1118

Acute Intestinal Obstruction.—Wangenstein treated twelve patients with simple acute mechanical intestinal obstruction by suction siphonage through the nasal catheter. Decompression was unsuccessful in an early case by this method because the catheter did not enter the duodenum. In another decompression was successfully effected by suction but recurred sixteen days later. The distention of the small intestine was again satisfactorily dealt with by suction by nasal catheter, but attempts at feeding the patient resulted in increasing distention. Enterostomy was done to permit of feeding. In nine instances, a satisfactory decompression was obtained by suction alone. In another also decompressed by suction in which the obstruction continued the patient unfortunately died following an ill advised attempt to ascertain the nature of the obstruction and reestablish the continuity of the intestine. The method has also been successfully used in a number of instances of subacute and chronic obstructions, due chiefly to narrowing of the pelvic colon and rectum by carcinoma of the pelvic genital organs of the female. Through relief of the obstruction by nasal and rectal suction in such instances and subsequent regulation of the diet and administration of liquid petrolatum many such patients have been spared a terminal colostomy. Suction by nasal catheter has been employed also as an auxiliary aid in the relief of distention following the release of obstructions of strangulation. Only under unusual circumstances such as gangrene or the greater length of the small intestine is a primary anastomosis to be done. The prohibitive mortality of doing a resection with anastomosis in the presence of devitalized intestine is well illustrated in strangulated external hernias. The devitalized segment should be brought out through the incision and on completion of the incision the dead intestine should be cut off and a catheter tied into each loop.

***Aspergillus Fumigatus* Sinus Infection.**—Adams reports a case of fungus infection in a woman due to *Aspergillus fumigatus* involving not only the maxillary sinus but the ethmoidal, sphenoid and orbit. In the three proved cases of *Aspergillus fumigatus* infection reported in the literature the maxillary sinus alone was involved. It is of interest to note that in the eight previously reported cases of fungus

infection of the sinuses seven were in women in one the sex was not mentioned. The mode of infection is not definitely known. The course of the disease is slow and progressive. In the present case the disease probably existed unrecognized for six years. Clinically, the symptoms are those of a chronic suppurative sinusitis with toxic manifestations. The disease may easily be confounded with an ordinary chronic suppurative sinusitis, mucocele and new growth. Only by careful biologic and pathologic studies can a definite diagnosis be made. The treatment found efficacious in this case was the internal administration of large quantities of a saturated solution of potassium iodide and thorough surgical removal of the growth. After one year the patient was free from symptoms, and there has been no recurrence.

Unilateral Spine Fusion—Klemberg describes a simplified technic for unilateral spine fusion in which a vertical incision is made from the tenth dorsal to the third lumbar spinous process. The incision is extended through the superficial and deep fascia immediately bringing into view the spinous processes. With a thin chisel the eleventh dorsal spinous process is split in an anteroposterior direction; the left half is left attached to the vertebra while the right half is split off from the lamina near its base. A periosteal elevator is inserted under the split off half of the process and the process and the periosteum on the right side of the arch are elevated from the underlying bone to the articulation. The interspinous ligament is cut through in an anteroposterior direction and the right half is retracted outward with a periosteal elevator. The same procedure is carried out on the other spinous processes and the interspinous ligaments. The laminae on the right side of the vertebrae are exposed. Under this thick layer of tissue a graft of beef bone is placed on the laminae near the articulations. Frequently, before placement of the graft chips of bone are removed from the laminae and placed across the interlaminae spaces. The sheet of muscle, bone and periosteum is then mobilized by two incisions through it one at each extremity. With gentle traction the split portions of the spinous processes are brought into the interspinous areas and into contact with the unsplit segments. They are held in place with interrupted strong number 3 or 4 chromicized catgut sutures passed through the strong fibroperiosteal covering on the spinous processes. The wound is closed with a layer of catgut sutures for the deep fascia and another for the superficial fascia and a layer of silk sutures for the skin. The author believes that this procedure of unilateral spine fusion permits thorough preparation of the vertebrae for fusion without removal of the bony support of the spinous processes. Union of the spinous processes is assured by bringing them with segments of their own substance. The time of operation is relatively short. The manipulation should be gentle. This operation may be employed in patients of advanced age, and also in those who are debilitated and too sick to be subjected to prolonged anesthesia and severe operative procedures.

Operations for Incontinence of Urine and Feces—Price presents a case of incontinence of feces and urine due to defective innervation. The operation of Wreden successfully controlled the anal incontinence. In order to relieve the incontinence of urine a method was devised which utilizes bodily posture to tighten or relax a strip of fascia slung about the urethra. In this case it has resulted in voluntary control of the bladder. The results of the two operations after a period of over a year have been satisfactory. The author gives the details of the second operation.

Colorado Medicine, Denver

30 205 244 (June) 1933

Spastic Colitis L. L. Hick Delta—p. 209

Shilling Blood Count R. H. Finney and Josephine N. Dunlop Pueblo p. 212

Health Examinations in Schools E. Jackson Denver—p. 215

Relation of Surgeon and Insurance Carrier Under Workmen's Compensation Act W. R. Waggener Denver—p. 218

*Natural Avoidance of Conception C. W. Anderson Denver—p. 223

Acute and Chronic Sinus Disease More About That Bone of the Rhinologist's Existence F. Carroll Fort Collins—p. 228

Natural Avoidance of Conception—Anderson contends that a permanent record of menstruation and ovulation should be kept by every woman. The majority of women can be taught to know when they ovulate. The process of ovulation normally

goes on in a regular cyclic or rhythmic succession. Ovulation always occurs twelve to sixteen days preceding the next menstruation. The unmated egg cell retains germinating ability only for about twenty-four hours after it leaves the ovary. The sperm lose their power to fertilize the ovum after two to three days in the female genital tract. The motility of sperm is no indication of its power to fecundate. On these facts the Ogmo-Knaus theory expounded by Latz is based. The theory in brief is that the period during which the woman is apt to be fecundated does not exceed seven or eight days before ovulation and two or three days for the life of sperm.

Georgia Medical Association Journal, Atlanta

22 199 239 (June) 1933

Diagnosis and Treatment of Syphilis O. C. Wenger Hot Springs National Park Ark.—p. 213

Coronary Disease I. A. Baucker Jr. Atlanta—p. 220

Atenua of Pregnancy S. E. Sanchez Barwick—p. 223

Iowa State Medical Society Journal, Des Moines

27 299 342 (June) 1933

President's Address Progress of Medicine W. W. Bowen Fort Dodge—p. 299

President's Flect's Address C. B. Taylor Ottumwa—p. 304

Tumors of Breast Attempt to Rationalize Their Management F. Peterson Iowa City—p. 306

Carcinoma in Relation to Cancer of Rectum C. J. Drueck Chicago—p. 308

Gastric Carcinoma H. A. Collins Des Moines—p. 311

Radium Treatment of Lymphomas with Reference to Carcinoma Bone A. J. Parkin Chicago—p. 314

Cystic Arachnoiditis W. D. Abbott Des Moines—p. 315

Johns Hopkins Hospital Bulletin, Baltimore

72 325 378 (May) 1933

Effect of Increasing Parity on Some Obstetric Conditions C. Leckham Baltimore—p. 325

Some Aspects and Problems of Intracranial Pressures L. H. W. Baltimore—p. 345

*Bilirubin Excretion as Test for Liver Function During Normal Pregnancy L. J. Soffer Baltimore—p. 365

Test for Liver Function During Pregnancy—Soffer performed a total of thirty-one bilirubin tests in order to determine the liver function of twenty-one normal pregnant women during the various phases of gestation. Eleven of the patients were observed during the first four months of pregnancy, and only one showed an abnormal response to the injected pigment. Of the ten patients studied during the last five months of pregnancy, all but one yielded abnormal results. Ten patients were investigated during both the first and the second half of pregnancy. Only two of these failed to show an increase of the injected bilirubin after four hours while one patient during the first half of pregnancy, showed an abnormal retention which was increased slightly in the second half. There seemed to be no relationship between the vomiting that occurs in the early part of pregnancy and the disturbed liver function in the later period. That the impairment is not a permanent feature is evidenced by the fact that those women who had gone through multiple pregnancies before the present study failed to show any increase in the retention of injected bilirubin during the first four months of gestation.

Journal of Pediatrics, St. Louis

2 641 786 (June) 1933

Peptic Ulcer in Children R. L. J. Kennedy Rochester Minn.—p. 64

*Morquio's Disease Presentation of Two Cases E. J. Barnett Spokane Wash.—p. 651

Body Build and Its Relation to Gastric Position, Form, Secretion and Motility and to Gastrointestinal Emptying Rate W. J. Siemsen and A. C. Ledoux Chicago—p. 657

Mental Growth of Prematurely Born Infants A. Gesell New Haven Conn.—p. 676

Tetany in Young Infants Case Report A. S. Small Boston—p. 681

*Icterus Neonatorum Study of Icterus Index in Relation to Fragility Hemoglobin Content and Number of Red Blood Cells M. B. Gordon and M. C. Kemelhor Brooklyn—p. 685

Meningitis in Infants and Children with Especial Reference to Age Incidence and Bacteriologic Diagnosis L. D. Fothergill and L. K. Sweet Boston—p. 696

Studies in Rickets VI Comparison of Development of Rachitic Children with That of Children in Whom Rickets Was Prevented by Ultraviolet Irradiation J. V. Greenebaum and T. K. Selkirk Cincinnati—p. 711

*Incontinence in Children B. I. Beverly Chicago—p. 718

- Postoperative Massive Atelectasis of Lung Case Report G B Bader, New York—p 726
Basal Metabolism Studies in Obesity in Children C G Kerley, New York—p 729
Child Tramping in Old Mexico J Ruhrah, Baltimore—p 733
Whooping Cough: Resume of a Seven Years Study L W Sauer, Evanston, Ill.—p 740
Acrodynia: Arsenic as Etiologic Factor F Meyer and E C Weise, Bridgeport, Conn.—p 750
Antiques of Pediatric Interest T G H Drake, Toronto, Canada—p 754

Morquio's Disease—Barnett relates the histories of two sisters having Morquio's disease. He thinks that all children suffering from this disease are members of one peculiar family or race. The children are short the eyes are widely separated, the nose is depressed the neck is short the sternum is so pushed and bent forward that it appears as a shelf on which the chin rests the spine is kyphotic the hips are flexed so that the children appear to crouch the hands extend almost to the markedly knocked knees the feet are kept apart and the ends of the long bones are prominent. That these cases present a clinical entity is evident. The familial tendency is also quite evident. The deformities are almost identical and yet are different from other classified types of hereditary deforming cartilaginous or osseous dystrophies.

Icterus Neonatorum—The study of Gordon and Kemelhor of the icterus index in relation to the number hemoglobin content and fragility of the red blood cells in the peripheral blood of thirty new born infants shows the following: 1 The icterus index during the first ten days of life shows higher values than at any other period under normal conditions. There is a rise and then a fall, the peak being reached on the sixth day. 2 The red blood cells show an initial polycythemia with a subsequent continuous drop in the first six days which is followed by an upward trend. The figures on the tenth day are below those of the second. 3 The hemoglobin content parallels the red blood cell count in both initial values and subsequent fall. 4 There is an initial increased fragility of the erythrocytes to saline solution, which diminishes and tends to approach normal figures on the tenth day. 5 Manifest jaundice was present in twenty-five of the thirty infants. The greatest degree of jaundice was observed in the first six days. Every new-born infant has jaundice, either latent or manifest. 6 A definite relationship exists between the icterus index and the values of the erythrocytes and hemoglobin. The index rises and the other two components fall in the first six days but the index falls in the latter part of the week irrespective of a rise or fall in the other two elements. 7 Manifest jaundice is most intense at the time of the greatest loss of erythrocytes and of the hemoglobin content of increased fragility and of highest icterus index. 8 All these conditions point to the hemolytic origin of icterus neonatorum.

Incontinence in Children—From a study of 250 cases of incontinence (mostly nocturnal enuresis), Beverly states that incontinence is but one of many symptoms in every case. It is but one manifestation of a disturbance of general behavior. Children remain infantile or return to their infancy when growing up becomes too difficult, the incontinence being one symptom of the infantilism. The factors causing the incontinence include any innate characteristic or environmental condition that makes growing up and taking on responsibility too difficult. The causative factors may be superficial or include deep seated personality disorders. The treatment consists in teaching the patient responsibility, psychotherapy and adjustment of environmental conditions. It is more important to treat the underlying maladjustment than the symptom.

Maine Medical Journal, Portland

24 91 124 (June) 1913

- Unsuspected Foreign Bodies F T Hill, Waterville—p 104
Recent Advances in Gynecology T C Bramhall, Portland—p 106

Medical Journal and Record, New York

137 441 476 (June 7) 1913

- Diet and Subnutrition M Einhorn, New York—p 441
Uterine Hemorrhage: Clinical Observations on Use of Ergotamine Tartrate J S Drisko, New York—p 442
Sudden Death C B McAuliffe, New York—p 445
Review of Census Actinomyces with a Resume of Sixty-Seven Cases of Pulmonary Involvement M Kerlan, Beverly Hills, Calif—p 447

Nebraska State Medical Journal, Lincoln

18 201 240 (June) 1933

- Present Day Problems of Medical Profession A Sachs, Omaha—p 201
Use of Carbohydrates in Diet and Treatment of Infants A F Abt, Chicago—p 206
Acute Dilatation of Stomach Following Operations E C Henry, Omaha—p 209
Modern Conception of Adequate Dental Service for the Child Patient T A Gardner, Omaha—p 211
Ectopic Pregnancy J C Buntin and W A Buntin, Cheyenne, Wyo—p 216
Some Observations Regarding Appendicitis C Andrews, Lincoln—p 219
Difficulties of Roentgen Ray Diagnosis of Ulcer O C Dickum, Omaha—p 221
Electric Cataract C M Swab, Omaha—p 223
The Billion Dollar Smoke: Working Truth in Reference to Cigaretts and Cigaret Smoking H Farrell McCook—p 226

New England Journal of Medicine, Boston

208 1183 1232 (June 8) 1933

- Hemophilic Arthritis C S Keefer and W K Myers, Boston—p 1183
Some Remarks on Treatment of Bichloride Poisoning with Presentation of Twenty One Cases E R Vintz, Boston—p 1189
*Angina Pectoris (or Status Anginosus) and Cardiac Asthma Induced by Paroxysmal Auricular Fibrillation and Paroxysmal Tachycardia: Value of Quinidine Sulphate in Treatment of These Conditions L Wolff, Boston—p 1194
*Simulation of Coronary Thrombosis by Angina Pectoris Induced by Paroxysmal Tachycardia: Two Case Reports J Sproull, Haverhill, Mass—p 1198

Angina Pectoris and Asthma—According to Wolff, angina pectoris (or status anginosus) and cardiac asthma may be induced by paroxysmal auricular fibrillation and paroxysmal tachycardia. The condition constitutes a distinct group which should be differentiated from all other cases of angina pectoris. The pain begins with or soon after the onset and ends with the termination of the arrhythmia. Nitrites are usually ineffective and are better not administered. Morphine is indicated except in the short attacks. Quinidine sulphate is effective in preventing or curtailing the paroxysms and the resulting pain or cardiac asthma. The condition should be differentiated from angina of effort and coronary thrombosis. Embolism, fever and leukocytosis may sometimes occur with or follow paroxysmal arrhythmias, a consideration which must be reckoned with in the study of patients with pain suggestive of coronary thrombosis. The cardiovascular changes that occur during a paroxysmal arrhythmia favor vascular thrombosis and it must be recognized that in the face of coronary artery disease, coronary thrombosis may be induced by a paroxysm of rapid heart action. The prevention or curtailment of such paroxysms by quinidine and other methods offers a prophylactic measure against coronary thrombosis in a small number of patients.

Coronary Thrombosis and Angina Pectoris—Sproull reports two cases of angina pectoris induced by paroxysmal tachycardia which resembled cases of coronary thrombosis. Because of the difficulties of establishing the diagnosis of paroxysmal tachycardia as a cause of angina pectoris it clearly appears that the proper and safe procedure is to treat suspected cases as if coronary thrombosis were present, mindful however, of the necessity of reserving ultimate diagnosis until all possible evidence has been accumulated and considered and expert consultation and advice have been obtained. Because of the similarity of the two conditions and because of the variation in their prognosis and treatment a complacent acceptance of the diagnosis of coronary thrombosis in attacks of severe angina pectoris with tachycardia is to be avoided.

Northwest Medicine, Seattle

32 175 216 (May) 1913

- Temperature Changes and Their Effect on Circulation H C Barrett, Philadelphia—p 173
Essential Hypertension F D Dulle, Portland, Ore—p 179
Progress of Patients with Hypertension G W Mallet, Portland, Ore—p 184
Subacute Bacterial Endocarditis: Three Cases Following Extractions of Teeth P A von Huul, Seattle—p 188
Differentiation of Various Mononuclear Leukocytes by Supravital Technique C P Wilson, Portland, Ore—p 191
Digitalis Intoxication F H Berger, Rochester, Minn—p 195
Diagnosis and Treatment of Pernicious Anemia C F Kemper, Dallas—p 196
Diagnosis and Treatment of Cancer of the Bladder T L Jerns, Cleveland—p 201

Ohio State Medical Journal, Columbus

29 273 336 (May 1) 1933

- Modern Management of Fractures of Skull and Intracranial Injuries E R Arn Dayton and R D Arn Springfield—p 293
- Medicine in Retrospect and Prospect Resume of Medical Accomplishment as Reviewed at Beginning of New Year A D 1933 C A Donn Columbus—p 297
- Congestive Heart Failure Report of Thirty Seven Cases Treated with Digitalis and Pentamethylenetetrazol B A Schwartz Cincinnati—p 308
- Calcification of Cystadenoma of Thyroid with Sinus Formation, Calcification of Adenoma of Thyroid Two Case Reports J F Beachler, Piqua and G A Woodhouse Pleasant Hill—p 311

Oklahoma State Medical Assn Journal, Muskogee

26 181 238 (June) 1933

- Honors and Scars T H McCarley McAlester—p 181
- Problem of Thrombosis R C Pigford Tulsa—p 184
- Obstetric Problems G R Osborn Tulsa—p 189
- Safety First Cataract Procedure C B Barker Guthrie—p 192
- Progress in Dermatology J Stevenson Tulsa—p 194
- Ambulatory Treatment of Varicose Ulcers E S Lain Oklahoma City—p 197
- The Medical Profession and Social Problems L Long Oklahoma City—p 201

Philippine Journal of Science, Manila

51 1 118 (May) 1933 Partial Index

- Study Concerning Rat Bite Fever in Manila Philippine Islands O Schobl H Hirano Ana Vazquez Colet J Ramirez and S Arima Manila—p 1
- Solar Ultraviolet Radiometry III Comparative Values for Manila and Baguio Philippine Islands W D Fleming Manila—p 69

Public Health Reports, Washington, D C

48 597 636 (June 2) 1933

- Heterologous Experience (Immunization) as Factor in Resistance to Disease C Armstrong and W T Harrison—p 597
- Malaria in Irrigated Regions of New Mexico M A Barber and L R Forbrich—p 610

48 637 676 (June 9) 1933

- *The Schwartzman Phenomenon Factors Complicating Its Use in Testing of Antimeningococcal Serum Anna M Pabst and Sara E Branham—p 639
- Endemic Gonor in Switzerland Review of Recent Contributions to Its Etiology Incidence and Prevention R Olesen—p 651

The Schwartzman Phenomenon—Pabst and Branham state that serum neutralization of the Schwartzman phenomenon produced by filtered meningococcus washings is not restricted to antimeningococcus serums but occurs also with antipneumococcus, antityphenteric and antigonococcus serums and with diphtheria antitoxin as well as with normal horse and rabbit serums. This nonspecific neutralization is so frequent and so marked that it seems to limit the usefulness of the Schwartzman phenomenon in the evaluation of therapeutic antimeningococcus serums.

Puerto Rico J Pub Health & Trop Med, San Juan

8 375 462 (June) 1933

- Gentian Violet in Filariasis B K Ashford and H McC Snyder San Juan—p 375
- Rhinocleroma Report of Case with Extension to Intestines A Peña Chavarria and W Rotter San Jose Costa Rica C A—p 399
- Nutrition of Foodstuffs Used in the Puerto Rican Diet V Vitamin A Contents of Arracacha Eggplant Squash Chayote Pigeon Pea Chick Pea String Beans Mamey Red Pepper Boiled Green Plantain Okra and Cassava J H Axtmayer and D H Cook San Juan—p 412
- Generic Ranks in Mycetozoula R A Toro San Juan—p 413
- Factors Contributing to High Death Rate in Puerto Rico M A Perez San Juan—p 421

Rhode Island Medical Journal, Providence

16 65 80 (May) 1933

- Annual Report of the Providence Tuberculosis League J I Pinckney Providence—p 65
- Study of Deafness One Hundred Cases J N Fishbein Providence—p 68

South Carolina Medical Assn Journal, Greenville

29 113 136 (May) 1933

- Some Modern Methods in Control and Treatment of Tuberculosis P P McCain Sanatorium N C—p 122

29 137 156 (June) 1933

- Hypochondriasis D H Smith Glenn Springs—p 140
- Thrombo-Angitis Obliterans A T Moore Columbia—p 144
- Treatment of Infectious Diseases in Children J P Price Florence—p 145

Virginia Medical Monthly, Richmond

60 133 198 (June) 1933

- The Year's Progress in Health Work Relating to the Medical Profession W F Draper Richmond—p 133
- Largest Medical Library in the United States F R Packard Philadelphia—p 139
- Consideration of Some of Newer Methods in Treatment of Encephalitis B R Tucker Richmond—p 144
- Tumors of the Ribs C C Smith Jr Norfolk—p 147
- Subacute Bacterial Endocarditis Following Extraction of Teeth Report of Two Cases D Vanderhoof and D Davis Richmond—p 151
- *Nonoperative Treatment for Delayed Union in the Tibia D M Faulkner Richmond—p 154
- Hay Fever Pollen Prevalences in Virginia Review of Six Year Survey W T Vaughan W R Graham and Ruth Whitehead Crockett Richmond—p 158
- Allergy in Children T E Orst Portsmouth—p 162
- Nature of Circulatory Disturbances in Hyperthyroidism (Thyrotoxicosis) W M Yater Washington D C—p 166
- Infant Feeding J B Stone Richmond—p 176

Treatment for Delayed Union in the Tibia—For delayed union in fractures of the tibia Faulkner applies a light snugly fitting unpadding plaster cast from the toes to the level of the upper end of the tibia, or, if the upper third of the leg is fractured the plaster extends above the knee. No padding is used except a little about the heel and the malleoli. The plaster bandages are applied directly to the skin. The direct application to the skin not only makes a snug fit but also gives additional fixation as the hairs are actually incorporated in the plaster. The cast is modeled closely about the malleoli and especially well about the tuberosities of the tibia. When the plaster has set slightly, the walking iron is applied. This consists of a malleable iron bar bent into the form of a flat bottomed U, long enough to reach from about 1 1/4 inches below the plaster sole to just below the tuberosities of the tibia with a horizontal bar at each end the length of which is roughly one fourth the circumference of the upper portion of the cast. This iron is shaped to fit snugly against the plaster cast in the long axis of the leg being offset slightly at the ankle, and is then incorporated in the cast with one or two more plaster bandages. As soon as the plaster is hard weight bearing is encouraged preferably with a cane only. The method is used as a routine in the treatment of fractures of the tibia in Bohler's clinic in Vienna.

Western J Surg, Obst & Gynecology, Portland, Ore

41 311 368 (June) 1933

- Relative Merits of Three Types of Technique for Submucous Implantation of Ureters into Large Intestine R C Coffey Portland Ore—p 311
- Postoperative Thrombophlebitis of Lower Extremities A A Matthews Spokane Wash—p 318
- Lowering Mortality in Cancer of Breast J E Else Portland Ore—p 326
- Recognition and Treatment of Paralytic Ileus J L Ranshoff and J D Heiman Cincinnati—p 331
- Hormonal Urine Test for Pregnancy in Private Practice H C Alward Los Angeles—p 339

Wisconsin Medical Journal, Madison

32 357-432 (June) 1933

- Parathyroid Glands and Their Relation to Calcium Metabolism D P Barr St Louis—p 378
- *Clinical Study of Vitamin D Milk N E McBeath and H O McMahon Milwaukee—p 385
- Will Cretinism Become Endemic in Wisconsin? C H Stoddard Milwaukee—p 389

Vitamin D Milk—McBeath and McMahon furnished 1 quart of vitamin D milk to twenty-five mothers who were selected from a prenatal clinic at about the sixth month of pregnancy. At 2 months of age and each month thereafter the baby was to be returned to the pediatric clinic for thorough physical and roentgen examination. Control babies were selected from the pediatric clinic at 2 months of age and given the same examination once a month. The diets of the mothers in the two groups varied only in the vitamin D milk, the control mothers having a quart of ordinary milk daily. The study was to be continued until the babies were 6 months old. A definite protection against rickets was evident in the infants of the mothers who used vitamin D milk during pregnancy and lactation and as a complementary feeding. The severity and overwhelming incidence of rickets in the control cases compared to a milder type and fewer cases in the vitamin D group, can be interpreted in no other way.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

30 83 162 (April June) 1933

- Incidence of Rickets in Manchester Catherine Chisholm—p 83
Aspiration Treatment of Laryngeal Diphtheria Olga F Tregelles—p 97
Extensive Purpura Simplex Following Measles L J M Laurent—p 104
*Rubella Complicated by Purpura Haemorrhagica Case W Gunn—p 111
Scarlet Fever Followed by Meningeal Hemorrhage Case E W Goodall—p 117

Rubella Complicated by Purpura Haemorrhagica—Gunn reports the case of a girl aged $9\frac{1}{2}$ years who gave a past history of measles whooping cough and chickenpox and a liability to mild attacks of epistaxis from the age of 5 years. Two days prior to admission the patient had a headache, followed the next day by a sore throat and the appearance of a rash on the face and chest. The rash was general and macular, with some of the lesions irregular and blotchy. The next day the rash was still manifest but the macules were receding from the face and trunk, while still marked on all four extremities. In the afternoon a dozen or so minute (pinhead or less) petechiae appeared in each supraclavicular fossa and four or five similar lesions were seen closely grouped together in the antecubital fossae. At midnight a severe attack of epistaxis from the right nostril took place suddenly. The next day more petechiae appeared above both clavicles. Oozing continued from the right nostril. An injection of 40 cc of horse serum was given intramuscularly with no benefit. On the following day the epistaxis had considerably diminished but more petechiae appeared over the upper end of the sternum and on the flexor surfaces of both forearms and thighs. A large discolored swelling appeared at the site of the serum injection. An intramuscular injection of 20 cc of a preparation of thrombogen and antithrombin was given, followed a few hours later by 50 cc of the mother's whole blood. Transfusion was not feasible as the patient's serum agglutinated the mother's cells in less than two minutes. Profuse hemorrhage appeared the next day from the left nostril while a slight oozing continued from the right nostril. This was accompanied by moderate fever considerable malaise and pallor of the mucous membranes. Next day the bleeding ceased but melena was present probably from swallowed blood. The general state was decidedly better the temperature fell to normal, and an uneventful recovery ensued apart from the occurrence of serum disease characterized by pyrexia for three days malaise, and a profuse urticarial and morbilliform rash. Of the three blood examinations performed no abnormal red or white cells were noted but slight polychromasia of the red corpuscles was present on the second examination. The Wassermann reaction in the blood serum was negative.

British Journal of Dermatology and Syphilis, London

45 225 280 (June) 1933

- *Ephedrine Dermatoses Clinical and Experimental Study of a Personal Case with Review of Literature E W Abramowitz and M H Noun—p 225
Fryspelas and Mycosis Fungoides H MacCormac—p 237
Question of Irradiation by X Rays as Cause of Sarcoma D W Montgomery and J D Nicelli—p 241
Treatment of Psoriasis by Injection of Scales A M Wrong—p 244
Ridex in Dermatology Comparison of Late Results of Treatment with X-ray Seeds and with Radium Plates R T Bram—p 247

Ephedrine Dermatoses—The comparison of Abramowitz and Noun of the reports of cutaneous symptoms produced by ephedrine and ephedrine showed few such reactions from ephedrine. Since the introduction of ephedrine an increasing number of skin reactions have occurred particularly from the natural product. The synthetic preparation ephedrine is reported to have given a negative reaction in two cases tested. The authors cite many definite reports from various authors on ephedrine dermatitis and an additional one occurring in their practice. These do not represent the total number of cases. The types of eruption that occurred were eczematous dermatitis and those usually grouped among the erythema (eczematous) urticarial scarlatiniform erythematous and purpuric lesions.

followed by desquamation. Both the eczematous and erythematous types of lesions were usually present in the same patient, the eczematous eruption predominating. The invariable situation of eruptions on the nose and lips even though present on the other parts of the body, pointed to local absorption followed by general dissemination through the circulation. Various types of lesions occurred, irrespective of whether the drug was used locally or given by mouth. Therefore the eruptions were dependent more on the amount absorbed and the individual state of susceptibility than on the method of administration. Sensitization usually developed soon after the use of the drug was started, but in one case it did not occur until it had been employed for two years. The patch or contact test was of great aid in determining the specific sensitizing agent and establishing the cause of the eruption. It was positive in those with eczematous lesions. The scratch test was mostly positive in those with lesions of the erythema group. The authors obtained a positive Prausnitz-Küstner reaction (passive transfer) but were unable to perform further tests to confirm it.

Treatment of Psoriasis—Wrong treated ten patients, who were suffering from psoriasis by the injection of scales. His technic was essentially that of Tomr. The chief modification was that the scales were weighed and 1 cc of sterile physiologic solution of sodium chloride was added to each 10 mg of scales. Five of the ten patients were definitely improved, one of them being entirely cleared, one was slightly improved and four showed no improvement, one receiving more intensive treatment than any other.

British Journal of Ophthalmology, London

17 321 384 (June) 1933

- Formation of Rosets in Rat Petina Katharine Tinsley—p 321
White Rings in Cornea A J Ballantyne—p 336
Id M S Mayou—p 342
Hemorrhage in Prolapsed Vitreous Pouch T H Butler—p 343
Diabetic Cataract E O G Kirwan—p 346
Microphthalmos with Congenital Defect of Lacrimal Apparatus S Silverman—p 351
Clinical Observations on Intra Ocular Tension of Opium Habitues in Iormosa K Kanda and K So—p 354

British Journal of Urology, London

5 113 212 (June) 1933

- Perineal Prostatectomy H P Winsbury White—p 113
Pedunculated Cysts Within Tunica Vaginalis Report of Case Showing Torsion of Pedicle F S Patch—p 122
Cancer of Prostate Its Diagnosis and Treatment T E Hammond—p 131

British Medical Journal, London

1 993 1032 (June 10) 1933

- *Observations on Cure of Malaria with Atebrin A I Hoops—p 993
Treatment of Malaria by Plasmochin and Quinine M Schwartz—p 995
Treatment of Acute Coryza by Autogenous Vaccines I Howle—p 996
*Acetylcholine in Treatment of Epilepsy I I McLaughlin—p 997
Acetylcholine Therapy in Epilepsy J E S Lloyd—p 999
Uses and Dangers of Cosmetics Alice Carleton—p 999
Treatment of Abscess of Breast H Bailey—p 1001
Treatment of Sydenham's Chorea D Briteman—p 1003

Cure of Malaria—Hoops states that the points in favor of the use of an amino acridine derivative (atebrin) in place of quinine are as follows: 1 The fever is usually reduced as quickly as with quinine. It is uncommon to find a temperature above 99°F after forty eight hours of treatment. 2 With the exception of subtertian gametocytes it is rare to find malarial parasites in the blood after the second day of treatment. 3 The treatment consists in the administration of $1\frac{1}{2}$ grains (0.1 Gm) of the drug three times a day for five days only as against a prolonged course of quinine. 4 The drug is not unpleasant to take and is not depressing. It is well tolerated even by pregnant women and young children and in high-water fever and also by persons suffering as well from other diseases such as pneumonia and influenza. 5 Relapses are rare. 6 The cost of a course of this drug is less than that of quinine. 7 In malaria of the benign tertian and quartan type only this drug is necessary. 8 In subtertian malaria it is necessary to give a five days course of plasmochin in addition to the amino acridine derivative. 9 This derivative is a powerful preventive of malaria in the sense that no patient treated with it became cured are rid of the malarial complex and are immune to Anopheles.

Acetylcholine in Treatment of Epilepsy—McLaughlin investigated the therapeutic effect of acetylcholine and a choline derivative in fourteen epileptic patients. They were subject to frequent major convulsive attacks, which were unassociated with an ascertainable organic disorder in the nervous system or elsewhere. During the experiment no change was made in the diet, usual medication or regimen of the subjects. The type and frequency of all convulsions, auras and equivalents were recorded for stated periods before, during and after treatment. No beneficial effect was observed during the administration of the choline derivative. During acetylcholine treatment there was a reduction of the number of seizures in five patients. There was no association between the decrease in the number of convulsions and the increased dosage (0.3 Gm, the initial dose being 0.1 Gm followed by a daily dose of 0.15 Gm) given during the second week. In two patients, diminution in the number of seizures was accompanied by an increase in psychic equivalents. No change in the type or severity of the seizures was observed in the other three. One patient became brighter and more energetic, and this mental improvement was maintained for some weeks, although the number of fits again increased after treatment. There was no mental change noted in the two patients, who showed decrease of fits during the injections. One patient in whom a decrease in the number of seizures occurred during the fourteen day period succeeding acetylcholine administration, was confined to bed at this time. In another a great increase in the number and severity of attacks coincided with the end of the choline derivative treatment. An attempt to arrest the rapidly repeated seizures by two 0.4 Gm doses of acetylcholine failed, and this form of treatment was in consequence stopped.

Glasgow Medical Journal

1 185 220 (June) 1933

- Preventive Medicine and Public Health E P Cathcart—p 185
Some Observations on General Anesthesia W B Primrose—p 192
*Enterogenous Cyst Record of Case A C Forrester—p 202

Enterogenous Cyst—Forrester reports a case of enterogenous cyst in a boy, aged 5, and states that, clinically two types may be differentiated. The first is that associated with acute complications and constitutes about 50 per cent of all cases; the case reported by the author is of this type. In most instances there is acute intestinal obstruction due to volvulus and, unless immediate surgical intervention is carried out, the outcome is fatal. The second type is characterized by a diversity of symptoms and signs. Many cases give a history of mild recurrent attacks of partial intestinal obstruction, dragging pain or some abdominal fullness is commonly present, in others, definite signs may be found, such as a freely movable tumor, which has a wide range of movement, but such cases are rare. The treatment for the acute case is the immediate relief of the obstruction, the magnitude of the operation depending on the patient's condition. With regard to the second type, drainage has been tried in those cases in which the communication between the lumen of the cyst and that of the intestine has been occluded, but the end-results are poor in that fistulas may result, and hence enucleation is a better form of treatment. In the cases in which the intestine is involved—and these constitute the majority of this type—resection of the intestine must be undertaken.

Heart, London

16 155 484 (June 14) 1933

- Electrocardiogram in Myocardial Infarction with Particular Reference to Initial Deflections of Ventricular Complex F N Wilson A G Macleod P S Barker F D Johnston and L L Klostermeyer—p 155
Gonococcal Endocarditis with Rupture of Aortic Valves and Death from Acute Pulmonary Edema Case W B Porter—p 201
*Material Relating to Coarctation of Aorta of Adult Type T Lewis—p 205
*Effects of Acetylcholine in Man E A Carmichael and F R Frazer—p 263
After Histories for Ten Years of a Thousand Men Suffering from Heart Disease Study in Prognosis R T Grant—p 275

Coarctation of Aorta—Lewis records nine cases of coarctation of the aorta of the adult type, including three necropsies. High blood pressure was a feature in all cases and has been observed to continue over periods as long as thirteen and one-half, fifteen and sixteen and one-half years. From observations

in such cases it is manifest that high blood pressure does not lead to progressive enlargement of the heart. The electrocardiograms usually present the signs of left-sided preponderance. The author concludes that prolonged overwork does not in itself cause heart failure. In coarctation, the average lag of the femoral behind the radial upstroke is but 0.032 second. The delay appreciable by palpation is due to delay in the summit of the femoral pulse, this lag averages 0.145 second. Measurements of the flow of the blood to the leg give normal values. In the head, neck and hand, vasodilatation seems to be the rule. It has not been established anatomically that in coarctation there is a mechanical obstruction to the outflow of the blood from the heart, at the first branching, constriction of the isthmus is compensated for by dilatation of the branches of the aortic arch. If coarctation is to be diagnosed with reasonable frequency, the femoral arteries must be felt in all cases of continuous high blood pressure, to ascertain whether the pulse is small and whether its summit lags behind the radial summit.

Acetylcholine in Man—Carmichael and Fraser observed that intravenous doses of from 0.01 to 0.03 Gm of acetylcholine are necessary to produce cardio-inhibitory effects, which appear from five to ten seconds after the injection and last for a few seconds only. The slowing of the heart is followed by a rise of rate above the original level with a return to normal usually in a half to one minute after the injection. The systolic and diastolic blood pressures fall during the phase of slow heart rate but return to the original level or a little higher during the phase of rapid heart rate. The phase of rapid heart rate is accompanied by flushing of the face, neck and upper thorax, and a feeling of warmth throughout the body. Occasionally there is slight flushing of the limbs. Coughing and a sensation of obstruction to respiration frequently accompany the phase of slow heart action. The nature and intensity of the response vary in different persons. The response can be abolished by the previous injection of atropine, but not by the previous injection of epinephrine. The previous injection of physostigmine intensifies and slightly prolongs the response. Intra-arterial injections produce flushing of the skin twenty seconds later in the corresponding territory. Acetylcholine given by subcutaneous and intramuscular injection in doses up to 0.5 Gm has no appreciable effect.

Indian Medical Gazette, Calcutta

68 305 364 (June) 1933

- Pathology of Elephantiasis of Filarial Origin H W Acton and S S Rao—p 305
*Treatment of Chronic Intestinal Amebiasis with Carbarsone R N Chopra B Sen and S Sen—p 315
Lethal Properties of Aqueous Extract of Young Bamboo Shoots A D Stewart and V N Moorthy—p 320
Nontoxicity of Plasmochin and Atebrin W B McQueen—p 323
Rice Infection and Epidemic Dropsy S L Sarkar and B M Gupta—p 324

Treatment of Amebiasis—Chopra and the Sens gave 4-carbamino phenylarsenic acid to thirty-one patients suffering from chronic intestinal amebiasis; twenty-three were cured, the drug failed in four and the result was indeterminate in four. The criterion of cure was based on five or more negative examinations of the stools on different days after the cessation of all treatment. This compound has amebicidal properties and is given in doses of 0.25 Gm in gelatin capsules twice daily. The proportion of probable cures to failures in this series was 575:1 as compared with 35:1 obtained by Knowles in a similar series with emetine bismuth iodide and 316:1 obtained by Acton and Chopra with kurchi bismuthous iodide. The drug produced no untoward effects in the doses administered.

Journal of State Medicine, London

41 311 372 (June) 1933

- The Rheumatic Clinic and Its Relation to Social Services M W Edminson—p 311
Juvenile Rheumatism R Marshall—p 328
The Need for Organized Health Education and Propaganda in Ireland J A Harbison—p 334
Physical Exercise and Maternity Frances Ivans Knowles—p 341
Physical Fitness of the Boy of School Age G E Friend—p 349
Notes on Preliminary Survey of Dublin Schoolchildren Mary M O'Leary—p 357
Convalescent Home for Children O M Holden—p 361
Some Observations on Influenza A T Till—p 365

Journal of Tropical Medicine and Hygiene, London

36 169 184 (June 15) 1933

- Notes on Cases of Calabar Swellings (Loa Loa Infection) E D W Greig—p 169
Chaulmoogra Oil and Its Derivatives in Treatment of Leprosy J W Tomb—p 170

Lancet, London

1 1163 1216 (June 3) 1933

- Some Observations on Preoperative Procedure I Principles E R Flint—p 1163
Problem of Relapse in Chronic Pulmonary Tuberculosis R C Wingfield—p 1166
*Chronic Ulcer of the Leg A J Cokkinis—p 1168
The Relation of the Stippled Cell and Polychromatic Cell to the Reticuloocyte L E H Whitley and C J C Britton—p 1173
*Protein Shock Therapy in Undulant Fever S Miller—p 1177

Chronic Ulcer of the Leg—Cokkinis states that chronic indolent ulcer of the leg is one of the results of prolonged venous and tissue engorgement, usually caused by varicose veins. It has a sharply localized distribution and is frequently a painful and disabling condition. It can be healed only by measures that correct the loss of vascular balance, and even then it is apt to recur. The ambulatory treatment consists of compression by elastic bandages and the obliteration of the varicose veins by injection and possibly ligation. It produces healing of the original ulcer in 80 per cent of cases and improves some of the remainder. The disadvantages of the elastic bandage treatment are that (1) it fails to heal a fifth of the ulcers, (2) recurrence is likely to occur at some future period in from 25 to 50 per cent of the cases, (3) it tends to aggravate eczema. The last disadvantage can be counteracted by the use of protective preparations under the elastic bandage. The first two disadvantages are not peculiar to ambulatory treatment. The advantages of the ambulatory method overshadow its disadvantages. It is relatively inexpensive, gives early relief, heartens the patient by producing rapid diminution of the ulcer and usually saves the patient much waste of time and money. Skin grafting does not benefit more than a small proportion of indolent ulcers. Prolonged after-care is most important and recurrences must be treated early.

Protein Shock Therapy in Undulant Fever—In treating a series of patients suffering from undulant fever Miller has consistently used protein shock therapy giving a TAB injection intravenously and repeating it every three to five days. He presents the case histories of the seven patients who received from one to five TAB injections. The result of treatment has been uniformly good, while in three of the patients its effect was dramatic and the illness was brought to an abrupt termination by only one injection. There have been no recurrences.

Medical Journal of Australia, Sydney

1 697 726 (June 10) 1933

- Problem of Gastric Carcinoma H C R Darling—p 697
Injuries Affecting Hearing N M Cuthbert—p 704
Mode of Development of Vesical Diverticulum W J Close—p 710

Practitioner, London

130 625 728 (June) 1933

- Pulmonary Complications Following Operation on Stomach and Duodenum D C Bilfour and H K Gray—p 625
Prognosis and Treatment of Rheumatic Heart Disease in Childhood I J Poynton—p 638
*Prevention of Rheumatic Heart Disease R Miller—p 649
Angina Pectoris Spasmodic or Paroxysmal J Hay—p 658
*Coronary Thrombosis D E Bedford—p 670
Treatment of Congestive Heart Failure C Bramwell—p 684
Treatment of Auricular Fibrillation and Flutter T F Cotton—p 698
Elements of Electrocardiography C Wilson—p 705

Rheumatic Heart Disease—Miller states that the prevention of rheumatic heart disease is bound up with the prevention of rheumatism. Heart disease is not the first of the rheumatic manifestations; it tends to accompany the later and more severe forms of the infection. The graver forms of rheumatism with their added danger to the heart are preceded by weeks or months during which minor and perhaps doubtful symptoms are present. It is during this stage of invasion that there is the best chance of preventing heart disease. The early recognition of the rheumatic tendency is the most important measure in preventing heart disease. When the presence of rheumatism is recognized or strongly suspected the routine procedure for the prevention of heart disease may consist of the following: 1. Regular

reevaluations of the child should be made, as only a proper examination of the heart can detect the early signs of its involvement. 2. The general environment of the child should be borne in mind and every effort should be made to provide the patient with proper clothing, dry rooms and wholesome food. 3. Exacerbations of rheumatic symptoms must be strictly treated. The recurrence of pains should be reported to the physician and, should they be accompanied by any rise in temperature, rest in bed should be ordered. 4. The removal of infected tonsils is indicated in this disease. 5. Salicylates should be given regularly in small doses over long periods. For this purpose the most suitable is acetylsalicylic acid in doses of from 5 to 10 grains (0.32 to 0.65 Gm.) night and morning.

Coronary Thrombosis—Bedford believes that in coronary thrombosis at the onset morphine is urgently required and should never be withheld, even when there is vomiting. The dosage must be adequate to afford relief from pain, and from one-half to one-fourth grain (0.03 to 0.016 Gm.) should be given at the start and a second dose if necessary. The bowels may be disregarded for the first few days when an enema may be given. Warmth is important. Dextrose by mouth and liquid foods are all that is required at first. Digitalis is required only if heart failure occurs or if there is auricular fibrillation, and moderate doses, such as 20 minims (1.2 cc.) three times a day, should be used. In cases of ventricular tachycardia quinidine can be tried provided electrocardiographic proof of the abnormal rhythm has been obtained. From 5 to 10 grains (0.32 to 0.65 Gm.) may be given and repeated in two hours in urgent cases. The most important part of the treatment is an adequate period of complete rest in bed. Convalescence should be gradual. When the infarct has healed and in the absence of anginal pain and of dyspnea, reasonable activity is to be encouraged rather than restricted.

Auricular Fibrillation—Cotton points out that the main object of treatment in auricular fibrillation is to make the patient comfortable until the normal rhythm is restored. A chloral hydrate mixture in 10 grain (0.65 Gm.) doses, repeated three or four times at four or six hour intervals is useful for this purpose. Chloralamide in cachets of 10 grains, repeated in the same way, is equally effective in calming the patient. Firm pressure on the carotid sinus over the carotid artery below the angle of the jaw for ten or fifteen seconds may release a mechanism, through the vagus nerve which can terminate the attack. If vomiting is induced the paroxysm may be shortened. Quinidine sulphate 3 grains (0.2 Gm.), given every four hours, has a specific effect in controlling this disturbance of rhythm. Digitalis should be withheld as it may establish a chronic state of fibrillation. A prolonged rest is not required after the normal rhythm has returned, unless symptoms of heart failure have developed during the attack. Quinidine may be prescribed between the attacks for its effect in lengthening the intervals and shortening the duration, the dose is 3 grains three times a day and if necessary, it can be increased to 15 grains (1 Gm.) in the twenty-four hours, the extra 6 grains (0.4 Gm.) to be taken at bedtime. When auricular fibrillation has lasted for more than ten days, it will not revert to a normal rhythm spontaneously. Treatment should relieve the heart of the heavy task which the rapid ventricular rate produced by the fibrillation has imposed on the ventricles. This can be obtained by giving digitalis in doses large enough for the drug to accumulate in the tissues of the body. A daily dosage of 1 drachm (4 cc.) of the tincture for five days or a week is indicated when the ventricular rate may be expected to fall to 70 or 80, at this level the dose should be halved and continued as long as the rate does not fall below 60. Profound slowing with coupling, nausea, vomiting and diarrhea are indications for withdrawal of the drug and complete rest. When these toxic effects have disappeared digitalis control can be resumed in the amount required. Gastric symptoms may be avoided by prescribing the drug well diluted and after food. The patient should always be kept at rest when digitalis is given in large doses during the initial stages of the treatment. In auricular flutter the slowing of the ventricular rate can be accomplished by giving digitalis in sufficiently large doses to produce the required slowing of the ventricles and by continuing the use of this drug in doses that will maintain a slow ventricular rate. In restoring the normal rhythm, the dosage and the management of the case is that of auricular fibrillation.

Annales de Medecine, Paris

34 101 196 (July) 1933

Lipases of Serum N Fiessinger, M Albeaux Fernet and A Gajdos —p 101

*Hepatic Organotherapy Parenteral Administration of Large Doses
M Villaret L Justin Besançon and Mme and H Desoulle —p 136
Phonocardiography C Ivan and M Racine —p 157
Electrocardiographic Studies Monopolar Curves R Lutembacher —p 175

Various Effects of Liver Extract—From an experience of many years Villaret and his associates state that liver extract is infinitely more active when administered by the parenteral route (subcutaneous, intramuscular or sometimes intravenous) than by mouth. The quality of the extract and the dose injected are important. They employ the hepatic extract in two concentrations from which the protein, albumin and lipoids have been extracted, and the more concentrated one is also almost completely deprived of histamine and choline. Of the weak extract, 1 cc equals 0.1 Gm of dried extract or 0.3 Gm of fresh liver, of the strong extract, 2 cc corresponds to 10 Gm of the dry extract or 30 Gm of fresh liver. The indications for parenteral liver extract are extensive. In small doses, it prevents or diminishes the accidents of toxic medications such as arsenic, mercury, bismuth, iodine, vaccines and serums, and increases their efficacy. For this purpose, 1 cc. of the weak extract may be given with each injection. In medium quantities (from 1 to 10 cc of the weak extract in daily injections), it undeniably improves certain symptoms of slight hepatic insufficiency, migraine, urticaria, pruritus, eczema, erythrodermia and acne. In infections, intoxications or cirrhoses, accompanied by more or less pronounced hepatic insufficiency, the latter is considerably reduced by the use of liver extract. The dosage may vary from 10 to 30 cc of the weak extract, depending on the case. In grave icterus, injections of the strongly concentrated liver extract in doses of from 2 to 4 cc (corresponding to from 30 to 60 Gm of fresh liver), and even higher, effectively combat the hemorrhages and nervous phenomena and noticeably retard the fatal evolution of the disease. In a case of cirrhotic hepatic insufficiency accompanied by erysipelas, it arrested a beginning grave icterus. In rare patients, too strong doses seem to provoke hepatalgia and diarrhea or reawaken former biliary colic.

Presse Medicale, Paris

41 1297 1312 (Aug 19) 1933

Mechanism of Cardiovascular Tonus D Danielopolu —p 1297

*Critical Study of Vitamins B R Lecoq —p 1300

Study of Vitamins B—On the basis of his own experiments and of the publications made to date on the complex questions of the vitamins B, Lecoq feels justified in affirming the existence of three distinct vitamins B. Vitamin B₁, the antineuritic vitamin which controls the nervous equilibrium, is labile to heat and alkalis. It is also designated vitamin B-P or F. Vitamin B₂ is antidermatitic and is above all the vitamin of cellular life and growth. It is stable in the presence of heat and alkalis. It corresponds to vitamin D of Funk and Dubin, and to vitamins G and P-P. Vitamin B₃, the antidenutrition vitamin, is indispensable to the utilization of glucides, proteins and lipoids. It is relatively thermostable but is labile in the presence of alkalis. It is identifiable with vitamins B₄ and B₅ and has sometimes been designated by the letter H.

41 1313 1328 (Aug 23) 1933

Treatment of Gastric and Duodenal Ulcers R Leriche —p 1313

*Unrecognized Therapeutic Use of Sodium Thiosulphate J Kabelik —p 1315

Unrecognized Therapeutic Use of Sodium Thiosulphate—Kabelik states that sodium thiosulphate deserves to be used much more extensively than it is at present and calls attention to some of its indications. Relying on the hypothesis that its therapeutic action consists chiefly in protecting the colloidal condition of the serum he has used it with favorable results in many diseases. In intravenous injections it acts as a stimulant of the reticulo-endothelial system; it modifies the reactions of the organism in severe burns and in eclampsia, especially the preeclamptic states and it favors chemotherapy in septicemia. It has a remarkable action in certain neuralgias and in rheumatism. It acts as an antidote in intoxications

with tincture of iodine or potassium permanganate, if used in gastric lavage. Used intravenously it is an antidote for intoxication with compound solution of cresol, arsenic and heavy metals. The complex salts of thiosulphate and the heavy metals have a selective affinity for cancerous tissues. It sensitizes them to actinotherapy and should therefore be associated with the latter. In addition to sodium thiosulphate the author employs the thiosulphate of magnesium, of calcium of copper and lead, and also its selenium salt associated with sodium thiosulphate in a relatively constant and stable solution. In these solutions there is always an excess of sodium thiosulphate, sometimes of dextrose. Usually 2 Gm of thiosulphate and 2 Gm of dextrose are injected intravenously.

Polislinico, Rome

40 1361 1400 (Aug 28) 1933 Practical Section

Syngobulbia Etiologic and Therapeutic Problem G Jona —p 1361

*Erythrocyte Sedimentation Speed in Surgical Diseases of Biliary Tract G Picardi —p 1369

*Treatment of Anemia of Pernicious Type with Intravenous Injection of Epinephrine U Dilberto —p 1372

Echinococcus Cysts of Neck Case D Curri —p 1373

Sedimentation Speed in Diseases of Biliary Tract—Picardi studied twenty patients with calculous cholecystitis and icterus and ten with various surgical diseases primarily duodenal ulcer. The venous blood was taken on a fasting stomach the day before and after operation and to it was added an anticoagulating solution. Readings were made every fifteen minutes for the first hour every hour for the next five hours and after twenty-four hours. In some patients the examination was repeated together with the test of coagulation and bleeding time. The author found that whereas the sedimentation speed increases after operation and gradually diminishes until the normal rate is attained in from two to fourteen days, there is a diminution in the coagulation time perhaps in relation to the platelet crisis following surgical intervention. In some patients with lesions of the biliary tract there was a diminution of the sedimentation speed while others showed a slight increase. In these patients there was always jaundice, in which urobilin-icterus predominated. Many patients had cholelithiasis of long duration others, reactivations of calculous cholecystitis. The author concludes that the sedimentation speed test is not constant in diseases of the biliary tract and is of slight value in similar diseases.

Anemia of Pernicious Type Treated with Epinephrine

—Dilberto treated a patient with grave anemia, lacking Hunter's tongue and leukopenia to be completely pernicious in type. After the number of erythrocytes was determined at 1,600,000, the patient received an initial dose of 0.01 mg of epinephrine and, following that, daily injections of one ninetyeth, one eightieth and so on to 0.1 mg. The last dose was repeated for twenty days, so that in thirty days the cumulative dose was 23 mg. After that, the spleen had returned to its physiologic limits. The red globules returned to normal as well as the hemoglobin and reticulocytes. The leukocytes remained invariable and the platelets oscillated around 250,000. After treatment, the hematologic picture showed no change and the patient remained in good health. Examination of the gastric content following injection of histamine showed the patient to be achylic.

Prensa Medica Argentina, Buenos Aires

20 1505 1562 (July 12) 1933

*Importance of Chronaxia in Cardiology M R Castex and R Lopez Ramirez —p 1505

Simple Gastric Ulcer and Cancerous Gastric Infiltration Differential Diagnosis P M Schlanger and M F Corsellas —p 1509

Garcin's Syndrome (Unilateral Total Paralysis of Cranial Nerves)

Case R Pardal —p 1520

Sodium Thiosulphate and Sodium Nitrite in Therapy of Hydrocyanic

Acid Poisoning E Hug —p 1527

Skin Reaction and Intradermal Reaction to Tuberculin in Childhood

L Charosky —p 1531

Frequency and Etiology of Postoperative Pulmonary Complications in

Children 1300 Observations J C Pellerano —p 1542

Importance of Chronaxia in Cardiology—Castex and Lopez Ramirez say that chronaxia has a clinical and therapeutic value in the physiology and pathology of the heart. They consider the heart a neuromuscular entity constituted of three different systems: striated muscle tissues, a network of specific conductive tissues and an extrinsic vagosympathetic nervous

system These three systems are in intimate anatomic and functional relation to each other and to the intracardiac blood supply system The chronaxic value of each of these systems is different from the other The harmonious functioning of the heart depends on the maintenance of the heterochronic proportional relations of the systems The alteration of the chronaxic value of any of them causes a functional disequilibrium, which affects the excitability of the heart The chronaxia of the heart is the numerical exponent of the excitability of its tissues All causes that modify the tissular excitability have a repercussion on the chronaxic values, which, when reaching certain abnormal limits, are a sign of organic disturbance, which has the same diagnostic importance as the deformations of the electrocardiogram The authors review the literature on the relation of chronaxia with the disturbances of auriculoventricular conduction and with the changes of the QRS phase of the ventricular electrocardiogram They state that the changes of the ventricular electrocardiogram are caused by disturbances of the chronaxia, which represent the repercussion of either organic or functional disturbances of Tawara's node, of the bundle of His or of its branches The current of cardiac action is a function of chronaxia and, if it is proved that its ascending phase has a duration of three or more chronaxic values (as Lapicque states), it is admissible to speak of a precise and practical numerical relationship between the two functions of the myocardium, that is, between its excitability and its conduction The chronaxia has a clinical value in the physiology of the heart because the electrocardiogram can be interpreted by establishing a relation between its various phases and the chronaxic value of the different segments and tissues of the heart The tissular lesions of the cardiovascular system can be localized by the interpretation of the electrocardiographic changes, in accordance with the chronaxic value of the pathologic segment The chronaxia is also of therapeutic value because several drugs (especially certain alkaloids), as well as certain toxins and poisons have an action of selective fixation on certain groups of muscles which action is regulated by the chronaxic value of their receptive nervous elements and can serve as a basis to regulate the administration of those drugs

Archiv für klinische Chirurgie, Berlin

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- Interscapulo Thoracic Amputation A Muller—p 565
Electrocutting with Ultra Short and Short Waves S Katsura and S Itoh—p 576
*The So Called Bone Endothelioma and Primary Epithelial Bone Tumors N Petrov and N Glasunow—p 589
Consideration of Twenty Thousand One Hundred and Ninety Nine Operations for Inguinal Hernia W Block—p 607
Benign Nonspecific Metastatic Ischiopubic Synchondritis of Children as a Typical Clinical Entity G Haberler—p 625
Relation of Dural Endothelioma to Skull Trauma Considered from a Surgical Point of View S A Bernstein—p 638
Injury to the Small Intestine E Trojan—p 652
*Presence of Pancreatic Juice in Bile Ducts Its Pathogenic Role in Acute Diseases of the Pancreas H L Popper—p 660
Treatment of Wounds with Artificial Light K F Pollaczek—p 696
Technic of Anastomosis of Stomach and Duodenum in Gastric Resection W I Muschkatn—p 709
Median Mesocolic Hernia K von Sailer—p 717
Serum Therapy of Peritonitis S Zimmer—p 726
The Most Efficient Method of Construction and Operation of High Pressure Steam Sterilizer of Dressings Konrich—p 739

Bone Endothelioma and Bone Tumors—Petrov and Glasunow describe a tumor of the shaft of the tibia which on histologic examination presented the characteristics of a basilioma Seven similar cases of primary epithelial bone tumors culled from the literature are described The localization of the tumor was seven times in the tibia and once in the ulna This occurrence in a long bone close to the skin suggests the possibility of ectodermic implantation Five out of the eight were basal cell tumors without cornification and three were basal cell tumors with parakeratotic cornification In contradistinction to carcinomas secondary to a tumor of the kidneys, the lungs or the prostate in which the parent tumor is often not recognized the basal cell carcinomas limited to the skin and readily inspected mucous membranes could not be long overlooked All the eight instances reviewed were apparently primary epithelial bone tumors of embryonal origin, and not metastases Because of the scarcity of observations no definite clinical picture can be evolved A correct diagnosis before

the histologic examination was not made in a single instance The diagnosis was usually that of a sarcoma, myxoma, chondroma, giant cell tumor or a bone cyst Metastases were not observed The tumor is apparently not very malignant, though the possibility of invasion and of metastases cannot be definitely excluded The proper treatment consists of resection of the involved portion of the shaft of the bone and its osteoplastic replacement by a bone transplant The authors state that, excepting hemangiomas, there are no proved cases of bone endotheliomas On the other hand they feel that on the basis of the eight cases described, the primary epithelial bone tumors should be included in the classification of bone tumors

Pancreatic Juice in Bile Ducts—Popper examined the bile, obtained at operation from 219 patients, for the presence of pancreatic ferments Of these, 161 were from patients with cholelithiasis eighteen from patients with pancreatitis, six from patients with neoplasm of the gallbladder and one from an instance of bile peritonitis without a visible perforation of the gallbladder Pancreatic ferments were demonstrated to be present in the bile of 17 per cent of the patients investigated The finding of normal gallbladders and normal bile ducts in several instances in which the pancreatic ferments were present in the bile suggests that the occurrence alone is not necessarily abnormal and need not lead to pathologic changes Regurgitation of the pancreatic juice into the common bile duct acquires a pathologic significance only when combined with stasis resulting from obstruction to the return of the secretion A stone in the choledochus or in the papilla of Vater is the most frequent cause of such an accident Obstruction to return of the pancreatic secretion will then lead either to a bile peritonitis without visible perforation of the gallbladder or to an acute pancreatitis In the sixteen cases of acute pancreatitis the author found the pancreatic ferments in the bile ducts in every instance He believes that the entry of the pancreatic secretion into the choledochus combined with stasis, causes activation of the trypsin in the mixture It is conceivable that the activation occurs in the lower pancreatic portion of the common bile duct and that the process spreads by diffusion and involves the pancreas The reverse, namely, the entrance of bile into the pancreatic duct, was demonstrated only exceptionally in postmortems on patients dying of acute pancreatitis The author does not feel that pancreatic necrosis and acute pancreatitis are distinct entities His results suggest that they represent the same process in different states, the difference in the intensity of the pathologic picture depending on the stage of digestion during which the pathologic activation of the trypsin takes place

Zeitschrift für Geburtshilfe u Gynäkologie, Stuttgart

106 1128 (July 21) 1933

- Prognosis of Gynecologic Operations by Internal Medical Examination K Simeonoff and G Rheindorf—p 1
Differential Diagnosis of Large Tumors of Peritoneal Cavity W Schellenberg—p 11
*Reticulo-Endothelial System and Ovarian Function H Uebermuth—p 46
Blood Cysts and Hematosalpinx L Kraul—p 64
Primiparas Aged 40 and Over H Veinny—p 76
Typical Changes in Hypophysis of Female Rats Caused by Ovarian Hormone F Bachner—p 87
Influence of Prolan on Healing Process of Inflamed Adnexa E Hoevelmann—p 92
Unusual Cases of Ectopic Pregnancy F Kovacs—p 100

Reticulo-Endothelial System and Ovarian Function—Uebermuth states that in the past the functional activity of the reticulo endothelial system in women has been determined by the application of the so-called endothelium test, which consists in raising the pressure within the capillaries by the application of a constricting band The appearance of petechial points below the constriction is indicative of vulnerability of the capillary wall and constitutes a positive test Another way of testing the functional capacity of the reticulo endothelial system is by testing its resorptive power To this purpose the author uses the congo red test as developed by Adler and Reimann Twenty cubic centimeters of blood is removed from a vein of the arm of a fasting person and this is followed by the injection of 12 cc of a 1 per cent watery solution of congo red Four minutes later and sixty minutes later, 5 cc specimens are drawn from a vein and the serums separated out The serums are tested spectroscopically, and those containing

admixture of hemoglobin are discarded. The congo red index of the tested specimen is arrived at by comparison with a standard solution of congo red. The test in women with a normal sexual cycle has established that the normal index amounts to from 40 to 70. The test depends on the well known fact that congo red, when injected into the circulation, is first deposited and later excreted mainly by the Kupffer cells of the liver, and only to a negligible extent by the kidneys. The congo red content of the blood, four minutes and sixty minutes after its introduction into the blood, serves as a fairly accurate index of the functional capacity of the reticulo-endothelial system. The object of this study was to determine the influence, if any, of the ovarian hormones on the functional capacity of the reticulo-endothelial system. The author found that this function was lowered in women with diminished or lost sexual function, namely, in patients presenting climacteric, menopausal and pathologic states with ovarian dysfunction or amenorrhea, or in patients surgically or roentgenologically castrated. These observations suggest that the function of the reticulo-endothelial system is subject to regulating influences of the sex hormones. Benda's observations that the absorbing power of the reticulo-endothelial system is lowered in the second half of pregnancy, probably owing to the loss of the protective function of the corpus luteum, is in agreement with the author's results.

Zeitschrift für Kinderheilkunde, Berlin

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- Influence of Viosterol on Circulation L. Doxiades and W. Uhse —p 137
- Anesthesia by Means of Solution of Sodium Salt of Secondary Butyl Beta Bromallyl Barbituric Acid for Encephalography During Childhood H. P. Kuttner and D. Hachenburg —p 152
- Prognosis in Epidemic Meningitis During Nursing Age F. Hasselbach —p 161
- *Significance of Insulin for Nondiabetic Disturbances During Childhood H. Rau —p 165
- Colon and Paracolon Bacilli in Stomach and Feces of Children With and Without Intestinal Disturbances E. Deak —p 196
- *Reticulo-Endotheliosis—New Disease Entity Among Hepatosplenomegalias S. A. Siwe —p 212
- Demonstration of Toxic Principle in Severe Dyspepsias of Nurslings h. Hassmann and E. Deak —p 248
- Peripheral Nerve Terminations in External Genitalia of the New Born J. Becker —p 264
- Microflora of Nonspecific Vulvovaginitis in Children G. Chaskina Munder —p 269
- Psychogenic Disturbances in Prepubertal Period J. K. Friedjung —p 277
- Significance of Diphtheria Antitoxin for Immunity Against Diphtheria E. Lorenz —p 282

Insulin in Nondiabetic Disturbances During Childhood—In his study on the use of insulin in nondiabetic disturbances during childhood, Rau cites observations indicating that insulin increases the receptivity of the tissues for nutritional substances in general, accelerates the digestion and increases the entire metabolism. He describes experiments showing that disturbances in the water exchange, infections and metabolic disturbances impair the normal insulin mechanism in nondiabetic organisms. In discussing the possibility of the therapeutic use of insulin, he points out that the process of growth taxes all organs to capacity and that young tissues have a particularly great need of carbohydrates. Experiences with insulin therapy of nondiabetic children are reported. The children generally received two injections each day, at 6 30 a m and 6 30 p m. The daily dose differed according to the weight of the child, that is, from 1 to 3 units was given for each kilogram of body weight. The deep subcutaneous injections were made in the thigh or in the buttock. The insulin therapy was instituted only in children in whom other therapeutic methods had failed, and, when the insulin injections were begun, the quantity and type of food were continued as before. The author first relates his observations on twenty-four nurslings and states that in twenty-one the insulin produced favorable results in one the effect was not convincing and in two the treatment failed entirely. However in one of the latter two there was severe atrophy and the nursling was already in such poor condition that recovery was impossible. The other failure was a case of microcephaly and apparently inferior constitution. The author employed insulin therapy also in five children with intestinal infantilism. Dietetic measures alone

had failed and the children suffered from severe hydrolability. The insulin therapy, of course, did not effect a permanent cure of the intestinal infantilism, but it made it possible to overcome periods of digestive insufficiency which endangered life and to stimulate the impaired metabolism. Of eight children with chronic undernutrition, due either to insufficient diet or to constitutional factors, five responded favorably to insulin therapy, and, of twenty-two children with secondary dystrophy, only three failed to respond favorably to insulin therapy.

A New Disease Entity Among Hepatosplenomegalias

—Among the rare hepatosplenomegalias with reticulo-endothelial hyperplasia occurring during childhood, Siwe combines into one group several cases that have the following characteristics: considerable enlargement of the spleen, moderate or great enlargement of the liver, moderate or pronounced swelling of the lymph nodes, a severe hemorrhagic tendency, particularly in the form of purpura, and a mild secondary anemia without characteristic leukocytosis or leukopenia and without monocytosis. The number of thrombocytes is normal or increased. The onset of the disturbance is acute and feverish, either with or without a demonstrable banal infection. The course is rapid and, under constant exacerbations, death finally follows within several weeks or months. The blood cultures remain negative. The splenic punctate reveals considerable reticulo-endothelial hyperplasia, eventually with admixture of leukocytes but without eosinophilia and without the typical deposits that characterize the cells in Gaucher's disease or in Niemann-Pick's disease. The author states that nothing definite can be said as yet about the etiology. He considers an infectious cause most likely, but whether this is the direct cause of the hyperplasia or whether it leads to it indirectly by way of a metabolic disturbance is not yet known. It is also possible that a primary metabolic disturbance may cause the changes but the functions and reactions of the reticulo-endothelial system are not yet sufficiently understood to determine the cause and the number of reported cases is too small to permit reliable knowledge about the pathogenic course.

Zeitschrift für Krebsforschung, Berlin

39 321 416 (July 22) 1933

- *Immunobiologic Cancer Prophylaxis and Constitutional Predisposition to Cancer A. Braunstein —p 321
- Action of Several Proteolytic Ferments on Malignant Tumors of Rats V. Ghiron —p 358
- *Active Colloid of Thyroid in Metastasis of Malignant Goiter R. B. Engelstad —p 369
- Influence of Roentgen Rays on Cholesterol Content of Blood of Patients with Carcinoma V. Jura —p 374
- Resistance of Virus of Mouse Sarcoma Toward Physical Influences A. Besredka and L. Gross —p 382
- Surface Extension and Growth of Tissue Cultures H. Laser —p 384
- Points of View on Extensive Cancer Statistics for Province Siena in Italy During Years from 1914 to 1930 G. A. Chiurco —p 391
- Studies on Tumor Immunity Investigations on Significance of Function of Sex Glands for Tumor Growth in White Mice E. Pribram —p 399
- Inoculation Tumors and Cancer Producing Factors S. Konsuloff —p 414

Cancer Prophylaxis and Predisposition to Cancer

After reviewing earlier studies, which proved to him that there is a possibility of specific antibody formation in animals with cancer and that the anticarcinoma substances are formed primarily in the spleen, Braunstein reports experimental and clinical studies with an extract prepared from the spleen and the reticulo-endothelial system of animals treated with tumor material or with blood from tumor patients. To these organ extracts, certain electrolytes were added. He found that the oral administration of the preparation to animals altered the predisposition to cancer, so that a large percentage of the animals became immune to it. This immunity persisted for months after cessation of the treatment. In animals in which inoculation tumors had taken root there was an inhibition of the growth amounting to 80 per cent. It was also observed that the animals treated with the preparation outlived the control animals by several months. Tumors that grew in relatively immune animals did not grow when further transmitted. When pregnant rats with tumors were treated with the extract the tumors that had retrogressed during pregnancy did not grow again after the animals had littered contrary to what

occurs in the tumor rats that have not been treated with the extract. The immunity that has been produced by the extract is hereditary in animals. Blood tests on animals as well as on human beings revealed that the preparation produces a defense reaction in the form of a monocytosis. The action of the preparation was corroborated also in Carrel's tissue cultures, in that the blood serum of rats immunized with the preparation inhibited the growth of the tumor cells. Investigations conducted according to Warburg revealed in some experiments an increase in the respiration intensity of the erythrocytes of rats and rabbits treated with the extract. Although no direct proof, this is, in view of the similarity between carcinoma tissues and the anuclear erythrocytes an indirect proof of a change in the energy metabolism (increase in oxidation and decrease in glycolysis). The author thinks that precaution is still advisable in drawing practical conclusions. However, he thinks that the identical defense reaction produced with the preparation in the animal and in the human organism, as well as in the healthy and in the cancerous organism, and the possibility of spontaneous cures of cancers in animals and in human subjects, justifies the consideration of an "internal" cancer prophylaxis. He considers the use of the preparation indicated under the following conditions: in suspected carcinoma, after ventricular or duodenal ulcers in precancerous conditions, in case of benign tumor after operative removal of tumors, during and after irradiation therapy, and in older persons with a heredity of cancer.

Active Colloid of Thyroid in Metastasis of Malignant Goiter—Engelstad reports the case of a woman, aged 82, who for twenty years had had a goiter that remained stationary. Then there developed, without noticeable changes in the goiter, a metastasis in the vault of the cranium. The metastasis had the histologic aspects of a carcinoma of the thyroid. By a biologic method that is, by means of a somewhat modified acetonitrile test, it was possible to demonstrate active thyroid colloid in the metastasis. The quantity of the colloid corresponded to more than 0.25 mg of sodium throxine for each gram of substance of the metastasis.

Zentralblatt fur Chirurgie, Leipzig

60 1937 2000 (Aug 19) 1933

- Question of Thorotrast as Safe and Suitable Contrast Medium in Urologic Roentgenology. H. Puhl—p 1938
*Anesthesia with Highly Volatilized Ether Vapor. M. Tiegel—p 1941
Surgical Treatment of Duodenal Ulcers that Cannot Be Resected. H. Floerken—p 1951
Streptotrichosis and Actinomycosis. H. Festen—p 1952
Roentgen Diagnosis of Fractures of Scaphoid Bone of the Wrist. F. Schnek—p 1954
Partial Anesthesia by Means of Solution of Sodium Salt of Secondary Butyl Beta Bromallyl Barbituric Acid in Uncontrollable Postoperative Hiccup. J. Becker—p 1956
Fatal Complication After Operation for Esophageal Diverticulum. C. Schindler—p 1957
Uremic Death in Tribrom Ethanol Anesthesia. T. M. Beckman—p 1958

Anesthesia with Highly Volatilized Ether Vapor—Tiegel submits his clinical observations with a new method of ether anesthesia. By means of a newly devised apparatus to be described in a later communication the ether is highly volatilized by being warmed considerably above its boiling point. Anesthesia induced by this method seems to possess characteristics almost entirely different from those of the old drop method of administration of ether. The two interesting features of the new method are that analgesia sets in earlier than the loss of consciousness and continues for some time after the consciousness is regained and that the blood of the patient is highly aerated as evidenced by a rosy color of the face all through the anesthesia and for a few days after. This highly volatilized ether vapor appears to be nonirritating to the bronchial mucosa making its administration possible in instances of bronchitis, colds and coryza. It has a stimulating effect on the circulation. Determinations of the blood pressure during anesthesia oscillated within from 5 to 10 millimeters. The author summarizes the advantages of the method as follows. It is safer than the old method which in itself was considered quite safe for decades. Premedication or combination with other anesthetic agents appears unnecessary. The induction of sleep is pleasant and is not accompanied by excitation. The degree of anesthesia is readily controlled. A stimulating effect

on respiration and circulation is evident. The indication for its use is not limited by age or organic disease. The return of consciousness is rapid. There is an absence of unpleasant postnarcotic phenomena, such as nausea, vomiting, headache and disturbance of the intestinal functions. The apparatus is simple and does not call for great skill in its use. The amount of ether required is less than with the old drop method. The physical and chemical properties of the highly volatilized ether are being investigated at the University of Bonn.

Zentralblatt fur Gynakologie, Leipzig

57 1745 1792 (July 29) 1933

- Sphincter Plastic According to Martius in Urethrovaginal Fistula. H. Naujoks—p 1745
Therapy of Vesicocervical Fistula in Absence of Body of Uterus. M. J. Litwak—p 1753
Diagnosis and Therapy of Calculi in Ureterocele. B. Ottow—p 1755
*Endometriosis of Bladder. H. Kohler—p 1762
Perforation of Bladder by Dermoid Cyst with Formation of Calculi. A. Dittrich—p 1776
Pyridium Therapy in Inflammatory Diseases of Urinary Tract. G. Kuhlitz—p 1777
Treatment of Most Severe Cases of Pyelitis of Pregnancy. A. Gengenbach—p 1780

Endometriosis of Bladder—Kohler contributes four observations of endometriosis of the bladder to the twenty-three cases contained in the literature. He thinks the rarity of the observations may be due in part to the fact that the clinical picture of this condition is not well known. Most of the cases reported were not diagnosed until operation. The cyclic changes characterizing endometrioses are particularly apparent in endometriosis of the bladder. In certain locations endometriosis of the bladder may cause little discomfort but, if the endometrioid cysts extend into the mucosa of the bladder, severe pain in the region of the bladder sets in at the beginning or just prior to the menstrual period. During micturition it assumes a convulsive character. It usually extends a few days beyond the close of the menstrual period, lasting from five to fourteen days in all. During the intermenstrual period there are no symptoms. The concurrence of menstrual period and bladder pains, especially if the urine at this period is bloody, is sufficient for diagnosis from the standpoint of anamnesis, as no other disease of the bladder is subject to cyclic changes. Cystoscopic confirmation of the diagnosis is desirable. A slightly projecting tumor on the posterior wall of the bladder, which varies in size from a bean to a nut and exhibits a bluish discoloration due to the endometrioid cysts indicates endometriosis. The cyclic changes are usually visible cystoscopically as increased volume and multiplication of the endometrioid cysts during the menses. The author observed the cyclic changes cystoscopically in three of his cases, and in one case they were obscured by a severe edema surrounding the tumor. Three of the patients had undergone Beutner's operation for adenitis in which the uterine wound is covered with vesical peritoneum. A direct relation between this operation and the endometriosis of the bladder was indicated by the finding in microscopic serial sections of an uninterrupted connection between the proliferating glandular epithelium of the uterine mucosa and the bladder tumor. This is comparable to the conditions found by other investigators in endometriosis of the abdominal scar following laparotomy. Therapy in women nearing the menopause should consist in roentgenologic castration. The disappearance of the cyclic changes causes the disappearance of all bladder symptoms. In younger women, if the tumor is near a ureter, roentgen irradiation is also preferred, in other locations excision of the tumor is advised.

Polska Gazeta Lekarska, Lwów

12 677 692 (Aug 27) 1933

- Medium Arterial Tension in Pulmonary Tuberculosis. Janina Dąbrowska—p 677
*Clinical Contribution to Acute Lymphatic Leukemia with Mikulicz's Disease. W. Jasinski and J. Szmurlo—p 679

Lymphatic Leukemia with Mikulicz's Disease—Jasinski and Szmurlo report the case of a girl aged 7, which may be an instance of acute lymphatic leukemia with the appearance of organic septicemia. The general course of the illness was one of septicemia. After a period of angina there occurred an infection of the bone marrow. Almost at the same time there arose a bilateral purulent infection of the inner ears.

and a copious eruption. Soon after this appeared the obscure lymphatic leukemia, hemorrhages, leukopenia with relative lymphocytosis, thrombopenia, purpuric spots, necrotic changes in the oral cavity, enlargement of the liver and of the spleen, enlarged salivary glands and soreness over the bones. To this picture was added the syndrome of Mikulicz's disease. In certain instances the condition improves after treatment with neoarsphenamine. The authors state that treatment should be with cinchona, as roentgen rays do not give beneficial results. Erlichowina noticed that roentgen treatment is contraindicated because it produces a decrease in the blood cells. In the authors' patient, treatment with arsenic remained without result, but roentgen treatment evoked worse results.

Sovetskaya Klinika, Moscow

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Central Nervous System and Symptoms of Exophthalmic Goiter V E Uspenskiy —p 71
Reconstructive Operations on Biliary Tracts Ya A Silberberg —p 116
*Role of Bacterial Flora in Development and Perforation of Duodenal Ulcer A Ya Shmejl —p 154
Diagnosis of Cancer of Cardial Portion of Stomach A S Levit —p 166
Intestinal Inflation as Diagnostic Means M A Nolde —p 181
*Pneumococcal Peritonitis in Children S D Ternovskiy —p 193
Various Forms of Flatfoot and Their Treatment P P Vreden —p 208

Bacterial Flora in Development and Perforation of Duodenal Ulcer—Shmejl made a histologic study of fifty stomachs resected for perforating duodenal ulcer. The specimens were fixed immediately on their removal in a 10 per cent solution of formaldehyde. The author studied 1,500 serial sections and found the presence of a bacterial flora at times rather sparse in 94 per cent. Study of other portions of the gastric wall established the presence of bacteria on the surface of the mucosa, resembling in many instances those observed in the area of the ulcer. He did not observe an inflammatory reaction to the bacteria on the part of the tissues, on the other hand, areas with a marked inflammatory process in the absence of bacteria were noted quite frequently. In three resected specimens, no bacteria were found either in the ulcerated area or in other parts of the stomach. A histologic picture of the gastric mucosa in perforating duodenal ulcer prepared after the method of Kalima, showed everywhere inflammatory changes. On the basis of these observations the author rejects the etiologic role of bacteria in the perforation as well as in the formation of ulcers.

Pneumococcal Peritonitis in Children—Ternovskiy reports twenty-six instances of pneumococcal peritonitis in children observed in the Obratsov Hospital in Moscow. Of these, twenty-one were in girls and five in boys. Fifteen were instances of diffuse peritonitis, and eleven of encapsulated peritonitis. All patients in the first group died while in the group of encapsulated abscesses there was only one death. Diarrhea was noted in 50 per cent. Labial herpes was observed once. Simultaneous involvement of pulmonary tissue was diagnosed in three, although on postmortem it was present in every instance. The author is skeptical about the genital origin of the disease, since he did not observe a single instance of vaginitis in his material. The clinical course of pneumococcal peritonitis is either that of an acute diffuse peritonitis leading to death in from one to seven days or that of a more chronic character in which three fairly definite stages can be recognized. The first stage is that of an acute progressive peritonitis, followed by a stage of subsidence and improvement in general and local symptoms. The second stage is followed by a renewed exacerbation of the abdominal symptoms with later definite signs of encapsulation. On the basis of his own material and that of practically all authors with the exception of Obadalek, the author is opposed to immediate surgical intervention and prefers to wait for signs of definite encapsulation of pus. A simple incision of an encapsulated abscess with or without the use of a drain is usually followed by marked improvement and cure in a high percentage of the cases.

Finska Lakaresallskapetets Handlingar, Helsingfors

75 61727 (July) 1933

- *Action of Bismuth in Anion Especially with Reference to Preparation Iodbismol J Strandberg and B Sjogren —p 617
*Essential Thrombopenia J Wahlberg —p 695

Action of Bismuth in Anion with Reference to Preparation Iodbismol—After Hanzlik, Gurchot, Mehrrens and Johnson's preliminary report on the penetrating power of bismuth in anion and its value in the treatment of syphilis, Strandberg and Sjogren conducted tests with a bismuth preparation with bismuth in anion iodbismol, containing 20.5 per cent of bismuth. They found that the preparation is rapidly absorbed after intramuscular injection, 2 per cent of the bismuth being eliminated during the first twenty-four hours after injection, the maximum elimination occurring about the seventh day, with elimination ended after three weeks. In experiments in animals, about 45 per cent of the injected bismuth was found in the organism, the values in brain and spinal cord corresponding to those in heart and lungs. In 88 per cent of the cases examined bismuth was demonstrated in the spinal fluid. In clinical tests 2 cc of the preparation was injected from every third to fifth day, ten or twelve injections altogether being given. A rapid curative effect was seen both in recent and in gummatous syphilis. The occasional by-effects noted consisted mainly of pain at the site of injection, of varying intensity and always transient.

Essential Thrombopenia—Wahlberg reviews the literature on essential thrombopenia and discusses the case of a hypothyroid woman, aged 20 who presented herself for treatment about one month after the onset of an acute attack of hemorrhagic diathesis believed to be her third. The blood pressure was almost normal, the thrombocyte count about 65,000, and bleeding and coagulation time the usual Calcium-oxysterol medication was given, together with iron in massive doses. In nine months traces of the attack had disappeared, but soon pronounced hemorrhagic diathesis with thrombopenia (a count of about 8,000) set in. The patient was hospitalized and given blood transfusion, intramuscular injections of blood, calcium and iron. After one month a latent stage was reached when it was felt that splenectomy could be done with the least possible risk. There was moderate postoperative shock, however, and hemostasis was difficult. The patient has since been well, and the postoperative increase in thrombocytes persists after one year's observation (a count of 765,100).

Norsk Magasin for Lægevidenskapen, Oslo

94 825 952 (Aug) 1933

- *Typhoid Carriers on West Coast of Norway IV T M Vogelsang and M Haaland —p 825
Acne and Chronic Eczema with Recovery After Removal of Foci of Infection (Tonsillectomy) A Galtung —p 851
*So Called Primary Chronic Appendicitis as Symptom in System Disease Study of Etiology and Pathogenesis M Kobro —p 856
Scattered Remarks on Hormones and Vitamins E Poulsson —p 886

Typhoid Carriers on West Coast of Norway—Vogelsang and Haaland report on seventeen new chronic typhoid (paratyphoid B) carriers. Elimination of bacteria has definitely ceased in four of the five cases treated with cholecystectomy and whose observation period has been long enough to show the results. In one of the previously reported instances, spontaneous recovery seems to have occurred between fourteen and twenty-nine months after infection.

So-Called Primary Chronic Appendicitis—Kobro says that in cases presenting pain in the right iliac fossa designated as primary chronic appendicitis there is often an incongruity between the microscopic lymphocyte infiltration of the vermiform process and the symptoms. In 219 cases of primary chronic appendicitis the most common symptoms were dyspepsia, constipation, dysuria and dysmenorrhea with frequent bradycardia. In twenty other cases there were bradycardia, respiratory arrhythmia, Aschner's reflex, increased dermographism and hyperhidrosis pointing to a disturbance of the vegetative nervous system, especially vagotonia. Investigations show that the vagotonia persists long after appendectomy. The author therefore thinks it possible that vagotonia is the central factor in primary chronic appendicitis, intestinal spasms being the real cause of the pain in a large number of these cases.

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POSTMORTEM EXAMINATIONS

METHOD OF OBTAINING PERMISSION

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NEW YORK

The importance of obtaining a high percentage of autopsies on the bodies of patients who die in hospitals needs no emphasis. Adequate instruction of students, development and evaluation of new methods of treatment, verification of diagnoses, accumulation of accurate records and statistics, and furtherance of research are best accomplished in institutions where a large percentage of deceased patients come to necropsy.

Hospitals which require a signed permission for autopsy as a prerequisite to admission have no difficulty in maintaining a high percentage. A different situation prevails in those hospitals which do not enforce such a requirement. These institutions (they constitute a majority of all hospitals) must depend on persuasion.

The request for permission to perform an autopsy must necessarily be made when the relatives are keyed to a high pitch of emotional excitement, when tender sentiments evoked by death offer strong opposition to any procedure which will entail indignity or mutilation to the body of the loved one. Against such a request are instantly marshaled powerful objections of a sentimental, personal or religious nature. To be successful the effort must be backed by appeals based on ethical and practical reasons known to the profession but inadequately realized by the public. These will be most effective if presented by a personality combining dignity, tactful sympathy and absolute sincerity.

The doctor making the request is in a favorable psychologic position. He is one of an honorable profession whose members for centuries have battled sickness and death. To him has fallen a heritage of prestige compounded of gratitude and respect—the intangible legacy from the medical giants of the past. Thorough awareness of this will confer on him a dignity out of all proportion to his age and lend to his arguments a convincing sincerity. The family already feel indebted to him and to the hospital staff for the care given to the patient and despite the repugnance aroused by his request realize that he is pleading a noble cause—the opportunity to carry on with their permission and cooperation the battle to save those similarly afflicted.

This grateful confidence exhibited by the patients and their relatives is the best asset and strongest argument possessed by the pleader. The degree to which it is developed during the patient's stay in the hospital will

determine the likelihood of an autopsy should death intervene. Everything which fosters that sentiment will favorably influence the decision, anything which disturbs it will militate against such permission.

Analysis of the cases in which autopsy was refused revealed the following reasons for failure:

1 Divided responsibility. One or more members of the resident staff assumed that some one else was attending to the matter with the result that no one made the request.

2 Delay. Relatives had left the hospital by the time the doctor arrived; relatives, anticipating such a request left the hospital hurriedly. The interview was delayed until the following day. Meanwhile the family had discussed the subject at home and decided against it.

3 Poor technic. This consists of a sudden brusque request, a high-pressure argument, an unsympathetic manner, loss of temper, threats, refusal to sign the death certificate, a request timidly and diffidently presented, unattractive personality of the doctor making the request, an interview in busy corridor and repeatedly interrupted so that the effectiveness of the argument was lost.

4 Indecision. Relatives, unwilling to assume responsibility of granting such permission (though not personally opposed to the autopsy), went home to consult others but did not return.

5 Professional objections, made by doctors, dentists, nurses, undertakers or their families.

6 Personality conflicts. These comprised dislike of the doctor making the request, dissatisfaction with the patient's treatment while in the hospital, antagonism because of real or fancied discourtesy by the doctor, nurse or a hospital employee, belief that the patient was neglected during his last hours (no doctor was present when the patient died and an intern did not arrive until fifteen minutes later), resentment because relatives were not called to the bedside until too late to see the patient alive, antagonism because the patient did not receive the last sacrament before death.

7 Religious objections. Jewish families frequently stated that their religion forbade postmortem examination while others objected to any delay, saying that burial was required within twenty-four hours after death.

8 Miscellaneous. These were a previous unhappy experience when a friend or relative had been submitted to autopsy and the body delivered in poor condition, the presence of too many relatives to afford their unanimous consent, a refusal based on one or more of the following objections:

I know, but I'd rather not permit it. Let some one else do it.

It will disfigure the body.

But even such an incision is a mutilation.

This is an ordinary case. You could never learn anything new from it.

But cancer is hopeless. An autopsy would benefit no one.

I do not think she would have wanted me to consent.

He has suffered enough.

To avoid these causes of failure, I instituted the following procedure at the Memorial Hospital for Cancer and Allied Diseases:

Single Responsibility.—The obtaining of permission for autopsy was made the sole responsibility of the

resident surgeon (myself) and carried to the point of recalling him to the hospital at any hour of the day or night whenever a patient died. No one else was permitted to broach the subject to the relatives except in certain circumstances where it seemed probable that the attending surgeon would be more likely to succeed.

Prompt Notification—Patients were placed on the critical list somewhat earlier than had been customary, so that the family was notified in ample time to reach the bedside. Special visiting privileges were thus extended to the relatives often for several days before death occurred.

Courtesy—Cultivation of a friendly spirit between the relatives and the hospital personnel was emphasized. Telephone inquiries concerning the patient were referred to the resident surgeon and, if thought advisable, a report was furnished. A courteous, frank statement as to the patient's condition prior to death often proved to be the approach to a friendly consideration of the request for an autopsy. An occasional special visiting privilege granted to a relative adds little to the work of the nurses and much to the gratitude of the recipient.

Accessibility—Half an hour was set aside each afternoon and evening immediately after the visiting hours, at which time the relatives could meet the resident surgeon and receive a frank appraisal of the patient's condition, with a prognosis and a discussion of treatment or other aspects of the case. At these meetings the relatives could not fail to be impressed with the amount of effort expended in examining, diagnosing and treating each patient, and the industry, patience and kindness of the nursing staff. Many of them lost their obvious fear of the hospital as a vague, impersonal mechanism, and felt that the patient was in the kindly hands of friends. When death appeared to be only a matter of hours, the relatives again were notified and the family clergyman summoned. The frequent visits of the intern and the resident surgeon during these last hours offered further evidence that no resource of medical science was omitted in an effort to prolong the patient's life.

PLAN OF SOLICITATION

Request for autopsy is never made in the patient's room or in the ward. Such a request is best made in a part of the hospital not too intimately associated with the deceased person and among surroundings calculated to lend an air of grave responsibility and dignity to the interview. Further, a white uniform is not an asset to such a discussion. To many it is the badge of immaturity, the mark of an undergraduate clinical clerk. The interview is more likely to be successful if the doctor wears a business suit with or without the long white coat associated in the layman's mind with the maturity of an attending surgeon.

After a patient has died and the relatives have recovered from their first expression of grief, they are taken in charge by the nurse and brought to meet the resident surgeon at the office of the clinical director. In conducting the interview the doctor's manner should unite dignity, responsibility and sympathy. No reference to the purpose of the meeting should be made. The subject should arise apparently without premeditation, and in most instances the talk can be guided around to it so that it will be broached by the family. Their first question will be a desire to know why they have been brought there. The usual reply is "I

have sent for you to ask if I can help you in any way. Are there any questions you would like to ask about this patient?" They will usually wish to discuss the case in some detail. With the history of the patient before one, it is worth while to answer their direct questions. A few minutes may suffice to form a quick estimate of the psychological types among the members of the family. It quickly becomes apparent which one is the dominant personality in the group, and it is on this person that one's attention must be concentrated and toward whom most of the conversation must be directed. The salient points of the case should be illustrated from the chart. A concise summary should be presented in nontechnical language. This should include the possible etiologic factors, familial tendency or hereditary character, course of the disease, reason for operating, operative observations, pathologic report and postoperative course leading to the patient's death. Each of these aspects of the case presents mysterious elements. These may stir the relatives' curiosity enough to influence them to permit an autopsy for their elucidation. This summary may require about fifteen minutes. It is time well spent. It probably is the first time that the assembled family have had a clear conception of the patient's trouble and any accurate knowledge of what the doctor tried to accomplish. The vague resentment because the patient died is transformed into gratitude to the doctors for the effort they made to save him.

During this discussion the relatives will ask questions as to the etiology, extent of the disease, explanation of certain symptoms and actual cause of death. Many of these cannot be answered with absolute certainty, and the frank recital of the limited knowledge on these points in the case of this particular patient should be qualified by the statement, "What I have told you is my clinical opinion, what I believe we would find if we were to make an examination." At this point the battle is joined. Any objection to such procedure is now made evident. One relative strongly opposed to autopsy can quickly bring the others to his side. Opposition must be met swiftly or all is lost. The effectiveness of the different arguments in favor of autopsy varies according to the psychologic mechanisms of the person to be convinced. It varies, therefore, according to age, sex, nationality, religion, education, past experience, prejudices and personality. On the accuracy with which one discovers these peculiarities depends the ability to select the appropriate argument, and thus to a great degree determines the chance of success. The ability to anticipate certain objections and eliminate them before they have been expressed enables one to prevent the implantation of a doubt in the minds of those heretofore favoring an autopsy. To do this one must watch them closely to detect evidences of conviction or opposition. It is sometimes best to maintain control of the discussion until the greater part of the argument has been presented, at other times, where the opposition is not too pronounced, it is better to let them talk. This is a delicate point, and confidence can be gained or lost by either step, depending on the correctness of one's judgment.

ARGUMENTS IN FAVOR OF AUTOPSY

Duty to Humanity—Each person owes a duty to humanity to permit the postmortem study of the bodies of those who die. Medical science has reached its present high level of development because of the opportunities afforded for such study in the past. The increased average span of life today was purchased by the sacri-

fices of our forebears. We of the present generation must not halt this progress.

Determination of the Cause of Death—The cause of death can be accurately determined. This is important to the family because of its bearing on familial or hereditary disease, cancer and occupational hazards and diseases or its relation to previous injuries, illnesses and operations. If there is any familial tendency to a particular disease, it should be discovered so that prophylactic measures may be taken to protect the children. It is of practical importance because it satisfies the insurance company of the true cause of death and serves to obviate litigation or delay in settlement. It will provide more accurate vital statistics, and improve the diagnostic ability of the doctors.

Extent of Disease—This can be established and the cause of certain obscure symptoms discovered. Autopsy will thus disclose whether these were related to a single disease or to two or more separate pathologic processes.

Medicolegal Cases—If one expects to bring suit to prove that this patient developed the disease from which he died as the result of injuries due to another's negligence, the best way to establish that contention is a thorough postmortem examination. The other party to the suit similarly may apply for a court order compelling such an autopsy. It is better for your contention that it be done here by a trained specialist so that his report may become a part of the deceased patient's hospital record.

Postmortem Examinations Not Unusual—The practice is growing rapidly in America. In many countries it is compulsory. More than three quarters of the patients who die in this hospital are submitted to such examination. It is not limited to the poor and obscure; consent is just as readily obtained from the families of our private patients. Most great men are examined post mortem: Columbus, Napoleon, Lincoln, Garfield, McKinley and others.

Rarity of the Disease (when this is actually true)—The condition from which the patient died is one of great rarity. It is little understood. There have been no recorded cures. At the present time any one who develops this disease inevitably succumbs to it. So few cases occur that doctors have not had the opportunity to make a thorough study of it. It is imperative that every such case be thoroughly investigated so that eventually a cure may be found.

Aid to Research—This is a research institution devoted to the study of tumors. Its clinical, radiologic, surgical, biologic, chemical, physical and pathologic departments are devoted to increasing our knowledge of these diseases. Generous gifts have supplied funds, equipment and trained personnel to that end. It is our privilege and solemn responsibility to provide the most necessary element—that one thing which money cannot buy—the actual material for study.

Evaluation of Treatment—The patient was treated according to a technique which is still in the process of development. Some of the patients with similar disease treated by this means have been greatly benefited, and many are alive and have been apparently free from disease for nearly two years. But this death represents one of our many failures. Why did he die and these other patients recover? Would a change in our technique have produced a happier result? The only way that we ever shall work out the best method of treatment is by a study of those whom we fail to save.

COUNTER-ARGUMENTS AND THEIR REFUTATION

1 "I know, but I'd rather not permit it. Let some one else do it."

"Because for many centuries people refused such permission, medicine made no advance. Much progress remains to be made. Had we learned, from examinations made in the past, how to recognize the early clinical signs of this disease, your mother might have been saved."

2 "It will disfigure the body."

"The examination is done by a skilled specialist through a surgical incision which afterward is closed, as in an operation. The appearance of the body is enhanced rather than injured. Discoloration from the accumulation of blood is avoided. The drainage of this blood and the removal of clots from the vessels permits better circulation of the embalming fluid and results in better preservation of the body. Your undertaker will verify this for you if he is asked."

3 "But even such an incision is a mutilation."

"It is, but the mutilation, as you call it, is an ethical procedure carried out with proper respect for the dead, for the ultimate benefit of humanity."

4 "This is an ordinary case. You could never learn anything new from it."

"That is something no one can ever say. Many important observations and even great discoveries have come from cases which seemed in no way unusual."

5 "But cancer is hopeless. An autopsy would benefit no one."

"There are more than a thousand cases of cancer apparently cured more than five years among the patients of this hospital. The methods employed in treating these successful cases were developed by the study of just such cases as this."

6 "I do not think she would have wanted me to consent."

"I should not want you to consent unless you believed that she would have been eager to do this much to help those afflicted as she was."

7 "He has suffered enough."

"What we would do would not add to his sufferings. Let us be thankful that they are ended. But thousands of other human beings at this present moment are suffering as he did. How happy he would be if he could know that your consent might preserve someone else from similar misery."

8 "We are orthodox Jews and our religion forbids autopsies."

"The law in reference to autopsies among Jews has been discussed by many eminent Jewish leaders. Rabbi B. L. Levinthal of Philadelphia (quoted by Hammond¹) has given his full approval to postmortem examination. He said 'I desire to state unquestionably that the dissection of a corpse is not prohibited under the Jewish Rabbinc Law where a reputable physician believes that it is essential for the advancement of medical science. Where a postmortem examination may result in the discovery of the origin or cause of some serious disease, it is my firm conviction that thus to serve humanity is sanctifying rather than desecrating the dead.' The present chief rabbi² of the orthodox community of Jerusalem is on record as giving consent to postmortem examination."

'Dr. Jacob Z. Lauterbach,³ an important Jewish scholar, stated that the only possible objection to postmortem examination would be based on an ancient Biblical law (Deuteronomy 21:23) recommending burial on the same day on which death occurred but that to the practice of autopsy as such one cannot find any express objection in the Talmud.' The following is quoted from his paper:

'The supposition that a postmortem examination constitutes a disgrace to the human body has no real basis in Jewish literature. It is true that the Talmud assumes that to dissect and examine a dead body might be considered a

¹ Hammond, F. C. Overcoming Opposition to Autopsies. *Mod Hosp* 25:333, 1925.

² Report of Committee on Postmortem Examinations of the American Hospital Association, 1930.

³ Lauterbach, Jacob Z. *American Israelite* Nov. 19, 1925.

disgrace to that body, which, of course, should be avoided. This, however, holds only in cases where it is done unnecessarily or for no good purpose. For in the same passage in the Talmud it is taken for granted that if such postmortem examination might possibly result in saving another man's life, we should by all means dissect and examine the dead body, so that we may possibly avoid the loss of another life.

"According to the Talmudic Rabbinic Law, all the laws of the Torah, excepting those against idolatry, incest and murder, may and should be violated, if necessary, for the saving of human life. According to this law, even if there were found a law prohibiting the dissecting of a human body, it would have to be ignored in favor of autopsy, which might lead to the saving of a human life."

"Dr. Charles D. Spivak,⁴ a noted Jewish scholar of Denver, has summarized the law as follows: 1. Autopsies are not permitted when they are an indignity to the dead. 2. Autopsies are permitted when they are an honor to the dead. 3. Autopsies are permitted when a human life can be saved thereby, for instance, when there is present a sick man who suffers from the same malady from which the deceased died. 4. Autopsies are not permitted for purely experimental purposes, i. e., when the sick are not before our eyes."

"In this hospital, we have many patients suffering from the same disease. We are seeking a cure. To serve in any way to save these 'sick before our eyes' is not an indignity, it is an honor to the dead. Jewish hospitals like Mount Sinai, Montefiore and Michael Reese maintain a high percentage of postmortem examinations on their Jewish patients and are supported and encouraged to do so by the leaders of the Jewish faith."

MISTAKES TO BE AVOIDED

Before talking to the relatives it is important to review the deceased patient's history so as to be familiar with the details of the case. The value is twofold, a general plan of argument can be outlined, based on whatever unusual features of the case justify a postmortem examination, further, one avoids the betrayal of ignorance of the case and the development of any suspicion that the doctor's sole interest is to secure the body for experimentation.

Delay should be avoided. The most favorable time to make the request is usually from about fifteen minutes to half an hour after the patient has died. This is sufficient time to permit recovery from their first expression of grief and is too soon to allow vaguely formulated ideas of opposition to become too firmly rooted.

It is unwise to entrust the negotiations to lay friends of the family. Despite their best intentions, failure is the rule. No layman commands the respect accorded the doctor, nor can he so well present the arguments for a postmortem examination. Neither is he likely to prove sufficiently alert, persistent or persuasive in counter-argument to overcome the family's objections. It is helpful, however, to have the friend present at the interview to second the doctor's argument with a nod of assent and approval or an occasional word of gentle urging.

Interpreters are unreliable. The same objections prevail here as in the case of the family friend, with the additional disadvantage that one cannot understand the interpreter's attempt to present the case to the family. The argument suffers grievously in translation by garbling, abbreviation and the interjection of the interpreter's personal feelings in the matter. It is preferable to employ a member of the house or visiting staff familiar with the language.

Unanimous consent of a large group of relatives is most difficult to obtain. A better plan is to select the strongest personality among them and talk to him privately. When he is thoroughly convinced, he may be delegated to persuade the others.

The interview should be characterized by quiet, unhurried dignity. The family should feel that the solicitor is there as a kindly, sympathetic friend to assist them with the final care of their loved one. High pressure argument, antagonism and quarreling have no place in this discussion and defeat its purpose. Unreasonable opposition must be disarmed by patient explanation which avoids giving offense or too much concession to an ignorant or antagonistic person. Loss of temper entails loss of respect and certain failure.

An impression of callous scientific curiosity may be created if permission for an autopsy is solicited before the patient has died. In general it should be avoided. It affords the family time to discuss the matter at home, where they are likely to decide definitely against it. One should, however, discuss the puzzling features of the case so as to prepare their minds for the suggestion of an examination to clear up these questions.

Euphemism of terms should be employed. It is better to avoid the use of words with gruesome connotations. For 'autopsy,' 'inquest' or 'necropsy,' where possible, one should substitute "examination of the body." The family can be made aware of what is intended without receiving an impression of mutilation and horror. The difference between a postmortem examination and an anatomic dissection should be made clear.

At first one should make no direct reference to the extent of the autopsy to be done. In a majority of cases a complete examination will be permitted. The greatest opposition, naturally, is against opening the skull. When reluctance is apparent, it is better (unless special features of the case indicate that an examination of the skull would be of value) to intimate that, of course, the examination will be limited to the organs of body cavities and that the head and face will not be disturbed. It is important that the doctor make this statement before the family has voiced this objection, else his reassurance becomes a concession that savors of bargaining. Partial examination or inspection of wounds may be requested if more extensive procedures are refused. The family should be invited to return in two weeks to receive a copy of the autopsy report and to discuss its significance.

Professional Objections—Doctors, dentists, nurses, undertakers and their relatives sometimes object to autopsies because of hearsay or personal experience with autopsies featured by carelessness, irreverence or disregard for the subsequent appearance of the body. It is helpful to have the pathologist at hand to give his assurance that he will personally perform the examination and to convince them that every precaution will be taken to improve the appearance and preservation of the body. Once this has been accomplished, one may employ whichever of the foregoing arguments are applicable to the case to convince the relatives of the necessity for the examination. The family should be reminded of the many instances of self-sacrifice in the life of the deceased and how appropriate it is that this last worldly contact should be a final act of altruism. If reluctance is still evident, one is justified in inviting the professional member of the family to attend the examination. This offer rarely is accepted although consent often is won by this evidence of good faith.

⁴ Spivak, C. D. Postmortem Examination Among the Jews. New York M. J. 96: 1185-1189 (June 13) 1914.

Additional Assistance—Catholics grant a high percentage of autopsies. Their objections are usually based on sentiment. When difficulty is encountered, the parish priest can be relied on to aid in obtaining permission.

The family physician is a potent force and, if invited, will usually exert his influence with the family. The assurance that he will be present at the examination may obtain their consent.

When matters seem difficult, it is well to remind the family how the attending physician strove to aid the patient, how disappointed he was when he failed and how much it would mean to him to be allowed to verify his diagnosis, to make certain that everything possible had been done for the patient and to increase his knowledge of such cases so that the next one might end more favorably. If still reluctant, the doctor mentioned should be called to emphasize these points in person.

SOLICITATION BY TELEGRAPH

When no relatives are present at the time of death a telegram should be sent to the next of kin recorded on the patient's history. In a splendid article on the subject, Mills⁶ suggested the following wording:

Mr. _____ died (suddenly) this morning. Not necessary to come. We can make all arrangements. Wire complete instructions for embalming and shipping. State limit of expenditure for furnishings. Important to authorize examination of the body.
(Signed) _____ M.D.

In case the reply omits the permission a second message is suggested as follows:

Instructions received, will execute them fully. Undertaker (mention name) will communicate direct. Government expects accurate diagnosis for death certificate. Clinical diagnosis inadequate. Please wire consent for examination collect. Body not disfigured, preservation improved.
(Signed) _____ M.D. (same name as that used before)

COOPERATION WITH UNDERTAKER

The undertaker usually will lend his support by reassuring the family that the procedure will not interfere with the embalming process or with the appearance of the body. Points of importance in developing and holding his loyalty are the following:

Conservation of the undertaker's time by prompt delivery of the death certificate to him, by performance of the autopsy as soon after death as possible and by delivery of the body to him at a specified time.

Careful restoration of the body to as nearly normal condition as possible by keeping the head and shoulders raised so as to facilitate the drainage of blood, limiting the incisions to the requirements of the case (from the suprasternal notch to the pubis in men, from beneath the breasts to the midline to the pubis in women). The circulation of the head and arms should be kept intact by ligating the left carotid, left subclavian and innominate arteries. The stumps of the esophagus, trachea and rectum should be tied off so as to prevent leakage. If the brain is removed the carotids should be ligated within the cranium and the cavity filled with plaster of paris; there should be careful approximation of the skull cap so as to prevent displacement. The head and face should be protected so that pressure marks are not produced. The undertaker should be afforded the use of the morgue where he may embalm the body.

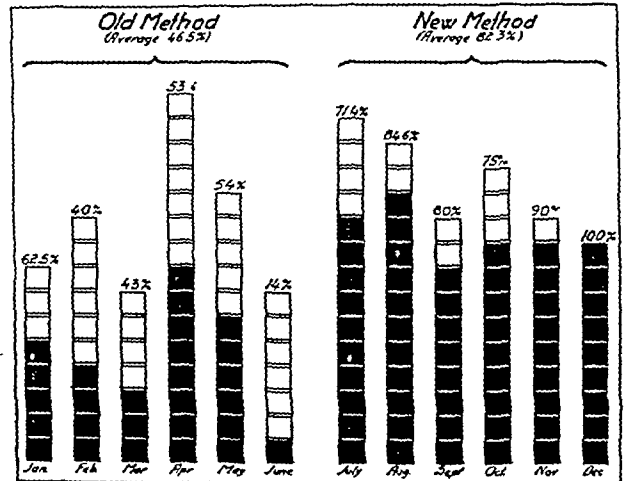
RESULTS

The foregoing procedure in soliciting permission for postmortem examination was established at the Memorial Hospital on July 1, 1932. During the preceding six months (from January 1 to June 30) there were

fifty-eight hospital deaths. From this number of possibilities twenty-seven autopsies were obtained. The monthly percentage varied from 14 to 62.5, and the average for the six months period was 46.5. Twelve of these patients were Jewish, from which number, one permission for autopsy was obtained (8.3 per cent).

During the next six months (from July 1 to December 31, during my incumbency), there were seventy-one deaths in the hospital. Relatives of three of these patients could not be located, so that there was no opportunity to solicit permission for autopsy. Fifty-six autopsies were obtained from this group of sixty-eight cases by the method described. Two of the deceased patients came from distant cities. Permission was requested by telegraph and consent obtained for both. Four families were solicited by telephone, and three of them consented to the examination. The monthly percentage varied from 71.4 to 100, and the average for the six months period was 82.3.

Sixteen patients were Jewish, in which group ten autopsies were granted. Fifty-two patients were Christians, from which number forty-six autopsies were



Autopsy record of the Memorial Hospital for 1932. The open squares indicate autopsies refused; the black squares, autopsies obtained.

secured. The Jewish group constituted 24 per cent of the total number and yielded an autopsy percentage of 62.5. The Christian group constituted 76 per cent of the total number and granted 89 per cent of autopsies. The rate among the Jewish patients was about two-thirds that of the others, but the figure (62.5 per cent) given constituted a sevenfold increase over the preceding six months, an improvement ascribed to tactful handling of the family and the religious question involved. As shown in table 1, there were 32 Protestant families, with 27 autopsies (84 per cent), and 20 Catholic families, with 19 autopsies (95 per cent).

Table 2 analyzes the effect which the kinship of the person solicited has on the percentage of autopsies granted. The percentage figures are so high that they do not reflect the variations in difficulty encountered. In general, the closer the relationship, the greater will be the objection to autopsy. Men as a rule, take a broader and more impersonal view and usually are more reasonable and less skeptical of human motives than are women. Experience reveals that husbands, fathers, brothers and sons present less difficulty than do the corresponding feminine relatives. Nevertheless, tactful

⁶ Mills, Ralph C. Means of Securing Post Mortem Examination. Bull. Am. Coll. Surgeons 14: 40-57 (Dec.) 1920.

persuasion and persistence usually prevail. Thus one notes that nearly equal numbers of autopsies were obtained from both sexes, twenty-nine from male relatives and twenty-seven from female relatives.

All Germans, Danes, Irish, Negroes and all Italians but one consented to autopsy. Six Jews refused because of religious and sentimental reasons. Six Christians withheld permission, three because of sentiment, one because of previous unsatisfactory experience with autopsies and one because the patient had exacted a promise not to permit it. One other attempt failed because it was impossible to obtain unanimity among thirteen assembled relatives.

Search for the most potent reason impelling consent to autopsy leads to the conviction that in most instances it is based on gratitude. This is cultivated during the patient's stay in the hospital by numerous instances of kindness and consideration. It is roused to its greatest power at the interview by the sincere, sympathetic and skilful persuasion of the solicitor. A high percentage of autopsies obtained in this manner testifies not only to the efficiency and scientific interest of the hospital

TABLE 1—*Religious Composition of Families Solicited*

Religion	Number	Autopsies	Percentage
Christian	52	46	89.0
Protestant	32	27	84.0
Catholic	20	19	95.0
Jewish	10	10	62.5

TABLE 2—*Effect of Relationship on Granting Permission*

Relationship	Number	Autopsies	Percentage
Husbands	10	8	80.0
Wives	18	15	83.3
Fathers	3	2	66.6
Mothers	5	4	80.0
Brothers	8	6	75.0
Sisters	3	3	100.0
Sons	15	12	80.0
Daughters	4	4	100.0
Executor	1	1	100.0
Executrix	1	1	100.0

staff but equally to the maintenance of cordial relations with the public.

SUMMARY

The importance of autopsies in the instruction of students, development of new methods of treatment, verification of diagnoses, accumulation of accurate statistics and furtherance of research is emphasized.

The reasons underlying failure to obtain permission for postmortem examination are classified and discussed. A detailed plan of solicitation is described. This procedure is based on unity of responsibility for securing permission for autopsy, cultivation of friendly relations between the family and the hospital personnel, a courteous and frank statement of the patient's condition while in the hospital, a prompt approach to the family after the death of the patient, a dignified, kindly and sincerely sympathetic manner during the interview, a frank discussion of the case, a tactful presentation of arguments for autopsy found by experience to be effective and the counter-arguments designed to refute the objections raised by the family. These arguments and counter-arguments are summarized, including expressions from leaders of the Jewish religion favoring postmortem examination and disavowing the frequently heard statement that autopsies are forbidden by Jewish rabbinic law.

The results of this plan of solicitation are reported. Prior to the development and adoption of this procedure, the percentage of autopsies at the Memorial Hospital was 46.5. During the six months period following the development of this plan the percentage of autopsies was nearly doubled. The monthly averages varied from 71 to 100 per cent, the average for the whole period being 82.3 per cent. The percentage of autopsies obtained from Jewish families was increased nearly sevenfold (from 8.3 to 62.5). Christians granted permission for postmortem examination in 89 per cent of cases.

Regardless of nationality, race or religion, the chief reason impelling consent to autopsy was the family's gratitude for numerous acts of kindness and consideration, roused to its greatest power by the sincere sympathy and skilful persuasion of the solicitor.

ABSTRACT OF DISCUSSION

DR. F. W. HARTMAN, Detroit. Dr. Hoffman's suggestion that the resident is a good person to obtain the permission is excellent. When the younger men are allowed to obtain permission it is along the latter part of their intern year that they begin to get a high percentage of examinations. In some places this function is left to an organization in the department of pathology, and that is very successful because it is continuous over a period of months or years. Wherever the responsibility is placed, the percentage of autopsies will be in direct proportion to the feeling of the head of the department. If that chief is not enthusiastic and insistent on autopsies the chances are that the percentage from his department will fall down. Next in importance for obtaining autopsies is the undertaker, who frequently makes the contact within half an hour or an hour after death. The antagonism of the undertaker frequently prevents the permission being obtained. It isn't the intelligent well informed undertaker, but one who is poorly educated, not so sure of his technique, that is afraid to embalm a body after a necropsy. I have found that the best way to bring this type of undertaker into line is for the pathologist to make some sort of contact with the undertakers' organizations, talk over the problems in common meeting and make some tentative agreement as to what shall be done and how it shall be done. A grievance committee may be established composed partly of pathologists and partly of undertakers, so that misunderstandings may be thrashed out and so that uncooperative undertakers may be brought into line. Dr. Hoffman laid emphasis on the clinical diagnosis and on letting the patient's relative know that perhaps the clinical diagnosis was not satisfactory. I think that is dangerous in many cases. The clinicians frequently will construe it as a reflection on their work, and the patient's relative will frequently come back for a complete review of the case. It is always well to avoid that argument if possible.

DR. ISRAEL DAVIDSOHN, Chicago. Dr. Hoffman emphasized that by the use of proper procedures the increase of permissions was striking, even among Jewish patients. In the experience of those familiar with conditions in Jewish hospitals, that is not unique. The percentage of postmortems in institutions such as the Mount Sinai Hospital in New York and the Michael Reese Hospital in Chicago compares favorably with other hospitals of similar standing. In the Mount Sinai Hospital in Philadelphia, with 78 per cent of Jewish patients, a low percentage of permissions was obtained until 1927, when, as a result of a campaign, the proportion began to rise rapidly till it surpassed 60 per cent in 1930 when I left Philadelphia. The increase has been continuing steadily. The Mount Sinai Hospital in Chicago with about 99 per cent of Jewish patients was dropped early in 1930 from the list of hospitals approved for internship by the American Medical Association on account of its low percentage of postmortem examination. As a result of effort on the part of the administration and the staff, the percentage was raised and the hospital was promptly reinstated. It is fair to conclude that the opinion that it is extremely difficult to get permissions for postmortem examinations from Jewish patients is not well borne out by facts. A few words

about the obstacles encountered while attempting to raise the percentage of postmortems. Pathologists can share in arousing greater interest in postmortems among physicians by laying greater stress on the correlation of the clinical and pathologic aspects of the postmortem observations. During our campaign in Philadelphia, the members of the attending staff signed permissions for postmortems on themselves. The presentation of such a permission has not infrequently been the most potent argument. We have also found that procedure of great help in Chicago.

DR WILLIAM J. HOFFMAN, New York. In regard to the discussion by Dr Hartman. In New York a joint committee has been formed consisting of members from the New York Academy of Medicine, the New York Pathological Society and the Metropolitan Funeral Directors Association. Cordial relations prevail among these groups and a code has been drawn up embodying suggestions for close cooperation between hospital authorities and funeral directors. Posters containing these suggestions are sent to all hospitals and are displayed in the autopsy rooms of the hospitals. The poster contains a diagram of the incisions that are approved by the undertakers and contains a list of nine technical suggestions which contribute to the better preservation of the body and aid the undertaker to improve its appearance. The discussion of the clinical diagnosis with the families of patients in general hospitals must be conducted with great caution, lest one seem to question the diagnosis of the attending physician. In a special cancer hospital this danger is less serious because the family has usually been already informed that the patient had cancer. The final pathologic diagnosis which the family receives after the autopsy is simply an elaboration of what has already been told. It sometimes includes, in addition, an explanation of certain terminal phenomena that the clinician himself was unable to explain during the illness of the patient. I agree with Dr Hartman that the matter must be handled with great delicacy.

PRESENT STATUS OF THE BIOPSY

A. B. McGRAW, MD

AND

F. W. HARTMAN, MD

DETROIT

Notwithstanding the advances which are steadily taking place in knowledge of the chemistry, serologic nature and biology of tumors, gross morphology and, more especially, microscopic morphology remain our best means of determining their histogenesis, classification, activity and prognosis. The diagnostic application of this morphologic knowledge lies in the procedure known as biopsy. Though this word strictly includes the removal of any tissue from a living subject for diagnostic examination, usage has tended to confine it to the examination of tumor tissue suspected of having malignant qualities.

About the middle of the nineteenth century the idea of biopsy began to be voiced in independent reports or suggestions by various authors here and abroad, among them Sedillot¹, Marmy² and Lebert³ in France, Hannover⁴ in Denmark and Donaldson⁵ in this country. It was Virchow,⁶ however, who first laid the rational

foundation of the procedure as a diagnostic aid to treatment when, in 1854, he demonstrated microscopically that excision was the proper treatment for malignant tumors because of the possibility of their complete eradication in the early localized stage of the disease. Later on Virchow⁷ became skeptical regarding the superiority of microscopic to gross pathologic diagnosis, and so great was his authority that satisfactory progress in the use or development of the biopsy was greatly hindered. True recognition of its value and possibilities came early in this century owing largely to the pioneer work of Wilson⁸ and the numerous carefully reasoned articles of Bloodgood,⁹ Ewing,¹⁰ MacCarty¹¹ and Wood¹². Concurrent efforts made to educate, through publicity, both the laity and the medical profession regarding cancer began more and more to bring early and often doubtful lesions to the attention of physicians, and thus helped to stimulate interest and effort in earlier and more accurate diagnosis of tumors. In 1917 the question of biopsy was brought to a controversial focus through offers of the New York City Board of Health and the Cancer Committee of Harvard University of free microscopic diagnosis on pieces of tissue submitted by practitioners. This offer had the support of the American Society for the Control of Cancer¹³ and of well known pathologists, but in some quarters it was bitterly denounced. The opinion of a qualified group of surgeons, as collected and tabulated by Greenough,¹⁴ was divided, but was generally in favor of biopsy with certain restrictions and conditions.

Among various objections to biopsy, two were mainly raised. One alleged that incision of a malignant tumor stimulates local growth, the other that incision disseminates tumor cells. The first of these objections had already been answered by the experimental work of Tyzzer¹⁵ and Lubarsch,¹⁶ and later in Knox's¹⁷ review of the subject of the relation of trauma to the occurrence and growth of tumors. Experiments conducted by Nather¹⁸ and interpreted as indicating an increase

7 Virchow, R. Diagnosis and Prognosis of Carcinoma. Arch f path Anat. 111 1 1888

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10 Ewing, James. The Incision of Tumors for Diagnosis. New York M. J. 102 10 (July) 1915. Letter to the Editor. Med. Rec. 91 376 (March) 1917. Aims and Methods of Cancer Diagnosis. Ibid. 98 200 (July) 1920. The Diagnosis of Cancer, J. A. M. A. 84 1 (Jan 3) 1925. Causation, Diagnosis and Treatment of Cancer. Baltimore. Williams & Wilkins Company, 1931

11 MacCarty, W. C. Efficiency in the Diagnosis of Neoplasms. Surg., Gynec. & Obst. 35 209 (Aug) 1922. The Cytologic Diagnosis of Neoplasms. J. A. M. A. 81 519 (Aug 18) 1923. The Early Diagnosis of Cancer. Arch. Clin. Cancer Research. 1 11 (Jan) 1925. A Cytologic Key to the Diagnosis and Prognosis of Neoplasms. J. Lab. & Clin. Med. 13 354 (Jan) 1928. Indications and Rules for Biopsy. Proc. Staff Meet. Mayo Clin. 4 61 1929. The Doctor's Practical Relation to the Cancer Problem. Bull. Am. Soc. Control Cancer. 15 1 (May) 1933

12 Wood, F. C. Biopsy in the Diagnosis of Tumors. Am. J. Cancer 15 2798 (Oct) 1931. The Experimental Pathology of Cancer. J. A. M. A. 84 4 (Jan 3) 1925

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14 Greenough, R. B. The Handling of Early and Doubtful Cases of Cancer. Ann. Surg. 66 385 (Oct) 1917

15 Tyzzer, E. E. Factors in the Production of Metastases. J. M. Research. 28 309 (July) 1913

16 Lubarsch, O. The Significance of Trauma in the Origin and Growth of Malignant Tumors. Med. Klin. 8 1651 (Oct) 1912

17 Knox, L. C. Trauma and Tumors. Arch. Path. 7 274 (Feb) 1929

18 Nather, K. Biopsy in Malignant Tumors in Surgery and Experiment. Arch. f. klin. Chir. 119 64 1922

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1 Sedillot, C. E. Recherches in Cancer. Strasbourg 1846

2 Marmy, The Utility of Microscopic Observation in the Diagnosis of Cancer. Rev. med. chir. de Paris 1 215 1846

3 Lebert, H. A. Practical Treatise on Cancerous Diseases and Those Curable Affections Confused with Cancer. Paris. J. B. Bailliere et fils 1851

4 Hannover, Adolph. Epithelioma An Independent Neoplasm Which Until Now Has Generally Been Considered Cancer. Leipzig. Leopold Voss 1852

5 Donaldson, F. The Practical Application of the Microscope to the Diagnosis of Cancer. Am. J. M. Sc. 25 43 (Jan) 1853

6 Virchow, R. Handbuch der speciellen Pathologie und Therapie, Erlangen 1854

of tumor growth following incision are not convincing. The second objection has been answered satisfactorily by Wood¹⁹ as far as biopsy on experimental tumors is concerned. In two large groups of rats, simultaneously inoculated with one of two varieties of sarcoma normally prone to produce metastases, he found no more metastases in the biopsied rats than in those whose tumors were excised on the day the biopsy was made. On the other hand, Knox²⁰ and Tyzzer¹⁵ showed independently that massage of mouse or rat tumors forced showers of tumor cell emboli into the lungs and greatly increased the incidence of metastases. On the clinical side, a satisfactory refutation of the numerous reports in the medical literature of isolated cases or small series of various misfortunes following biopsy is made in the statement of Roux-Berger²¹. In a consecutive series of 825 cases of lingual cancer reported from the Curie Institute of Paris, where no patients are treated without biopsy, he found no evidence of harm from the careful diagnostic excision of tissue.

Advances in methods of rapidly sectioning and staining biopsy material have been developed in this country mainly by Wilson, MacCarty and Bloodgood in the application of the freezing microtome to fresh unfixed tissue, by Warthin²² in his twenty-four hour method for quick fixation, embedding, sectioning and staining, and by Terry²³ in the surface staining of fresh unfixed, thick sections examined by transmitted light. In the foreign literature E. H. Shaw²⁴ reported a method not unlike Wilson's, and Hoffheim²⁵ favored the older method of quick fixation in hot formaldehyde before freezing and sectioning. Dudgeon and Patrick²⁶ reported satisfactory results from stained films of surface scrapings from incised tumors. Dengler²⁷ advocated teased-out bits of tissue coverslipped and treated with 1 per cent acetic acid to accentuate cell detail. Schultz-Brauns²⁸ has made the ingenious suggestion that maintaining the low temperature of a thin frozen section by using a thoroughly chilled microtome knife causes such firm and unwrinkled adhesion to a glass slide that staining is both facilitated and improved. Leroux²⁹ described surface illumination of surface-stained thick sections by a small electric bulb built into and operating through the objective of the microscope. Mandelbaum,³⁰ Quesnel³¹ and Zemansky³² have each described ingenious methods for fixing and staining the cells of pleural and peritoneal exudates.

Within the past few years in addition to numerous articles restricted to the application of the biopsy in

some special field, comprehensive surveys of the entire question with extensive bibliographies have appeared in the German literature by Baumecker³³ and Batzdorff,³⁴ in the French by Robert³⁵ and recently in the American literature by Hellwig³⁶. In spite of all this published material, there are certain aspects of biopsies which may properly be emphasized at this time.

THE RELATION OF BIOPSY TO OTHER DIAGNOSTIC PROCEDURES

Although the general clinical aspect of cancer is by no means a completely explored territory, it is sometimes a neglected one. Not only is this true of deep-seated or obscure growths, but it is especially true in the case of small surface lesions in which biopsy information is easily obtained and so often is quickly conclusive. Whether a patient presents a visible, palpable lesion, large or small, or only suggestive symptoms of internal cancer, no form of local examination is properly made without an accompanying clear, searching history and careful general physical examination supplemented by appropriate laboratory investigations. For the local lesion itself, close critical inspection and palpation described in accurately comparable terms are nowhere more important than in malignant conditions. The biopsy should never replace or precede other clinical methods of diagnosis, but should rather be used to supplement them by confirming or disproving the clinical diagnosis, as is the case in all other laboratory procedures. The relation of biopsy to roentgen diagnosis differs from its relation to clinical diagnosis in that the x-ray film frequently offers an entirely different and often satisfactory method of objective diagnosis and permanent record, as in the case of certain tumors of the bone, thus making biopsy unnecessary. Again the relative merits and indications of therapeutic tests in relation to biopsies are matters that have been given comparatively little attention. A therapeutic test in the form of antisyphilitic treatment may be used legitimately in early testicular tumors and certain lesions of the periosteum and bone in the presence of untreated syphilis. In the form of radiation therapy it may be used in suspected Ewing's sarcoma of the bone and in suspected lympho-epithelioma, lymphosarcoma and Hodgkin's disease. In all of the lesions cited the therapeutic test should precede biopsy, and, if prompt response to therapy results, the biopsy may be dispensed with.

COOPERATION BETWEEN WELL TRAINED SURGEONS AND PATHOLOGISTS

Cooperation between surgeons and pathologists is essential for obtaining satisfactory biopsy material. In the first place it is obvious that unless the surgeon has a good knowledge of pathology, he will be unable to recognize and differentiate neoplasms grossly, and he will surely fail frequently in the selection of proper portions of the suspected lesion for microscopic examination. Further, this knowledge of pathology is necessary if the surgeon is to recognize properly the problem of the pathologist. The arbitrary attitude of some surgeons that pathology is a mathematical science in which any trained technician can find the correct answer not only makes the work of the pathologist unpleasant, but

- 19 Wood F C Diagnostic Incision of Tumors J A M A 73 764 (Sept 6) 1919
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- 24 Shaw E H Immediate Microscopic Diagnosis of Tumors at Time of Operation Lancet 1 218 (Feb 3) 1923
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- 26 Dudgeon L S and Patrick C V A New Method for Rapid Microscopic Diagnosis of Tumors Brit J Surg 15 250 (Oct) 1927
- 27 Dengler R Rapid Histological Diagnosis of Malignant Tumors Zentralbl f Gynak 53 457 (Feb 23) 1929
- 28 Schultz-Brauns O A New Method for Quick Frozen Unfixed Sections Klin Wchnschr 10 113 (Jan) 17 1931
- 29 Leroux R A New Technique for Rapid Histological Examination Bull d Assoc franc p l'etude du cancer 20 698 1931
- 30 Mandelbaum F S Paraffin Sections of Centrifuged Exudates J Lab & Clin Med 2 580 (May) 1917
- 31 Quesnel U Diagnosis of Cancer from Tumor Cells in Exudates of Serous Cavities Acta med Scandinav 53 765 1921 abstr J A M A 76 903 (March 26) 1921
- 32 Zemansky A P Jr Examination of Fluids for Tumor Cells Am J M Sc 175 489 (April) 1928

- 33 Baumecker H Biopsy in Surgery Its Technic Indications and Contraindications Ergebn d Chir u Orthop 24 109 1931
- 34 Batzdorff E Dangers and Values of Biopsy Beitr z klin Chir 146 207 1929
- 35 Robert P F On the Subject of Biopsies Thesis Paris 1923 no 416
- 36 Hellwig C A Biopsy in Tumors Arch Path 13 607 (April) 1932

unscientific and often inaccurate. The pathologist, on the other hand, should have a broad training and experience in both gross and microscopic examination, which can be acquired only by the observation of a large amount of fresh surgical material through a period of years.

The pathologist's experience will be particularly helpful to the surgeon if it includes the clinical observations of neoplasms of all kinds. With such experience the pathologist, working at the elbow of the surgeon, can be of great assistance in the gross differential diagnosis of the lesion and in the selection of material for microscopic diagnosis, and can render a far more valuable opinion as to diagnosis and classification. Such cooperation of the surgeon and pathologist is essential for the best results and can be obtained, of course, only when the pathologist is always available during an operation.

OBTAINING BIOPSY MATERIAL

Advances in the technic of obtaining biopsy specimens may be correlated mainly with the development of new instruments. The various endoscopic instruments have made biopsies from the larynx, esophagus, urinary bladder and lower bowel possible, but they have thereby added much to the burdens of the surgeon and pathologist because the material obtained is necessarily limited in amount and, unless properly selected by an operator who has a good knowledge of gross pathologic changes in his particular field, is more apt to give a misleading picture and a false sense of security than an accurate diagnosis. The pathologist, although properly trained, may be led into error not only because of the small size of the tissue obtained, but also because it is too often from the surface of the lesion and does not show adequately the deeper structure of the tumor or its relation to normal surrounding tissue. Further, the pathologist too frequently feels obligated to give an opinion despite the fact that he knows the tissue submitted is inadequate. In this case the greatest service will be rendered by his reserving opinion and requesting more tissue.

The needle puncture method of Martin and Ellis³⁷ and the punch biopsy method of Hoffman³⁸ offer new opportunities of obtaining tissue from deep-lying growths without cutting operations. Their chief applications would seem to be, first, in late lesions in which infection and ulceration might conceivably result from incision, and second in deep-lying lesions in which radiation might be the method of choice in treatment. The general objections to these methods are, first, that to obtain satisfactory specimens considerable special training and practice on the part of the operator are required, and, second that the interpretation of the material obtained imposes like requirements on the pathologist. Those who are competent to diagnose tumor tissues when obtained and prepared in the usual manner will need readjustment of their criteria, as well as additional experience with this particular method, before placing reliance on it.

The cautery loop may be used in place of the knife in obtaining biopsy material but distortion of the tissue from the heat must be avoided. While the white hot cautery loop cuts more like the knife and gives little distortion dull red heat seals lymphatics better but always ruins small bits for microscopic examination.

The higher temperature for excision followed by a lower temperature for sealing the lymphatics and blood vessels seems the best way for employing this method. Similarly, the electrodesiccating current, applied by a narrow blade or a stiff wire loop and followed by electrocoagulation of the denuded surfaces, is an equally useful substitute for excision by a knife. Like the thermal cautery, it has the advantage of applying minimal pressure to tissues in the course of cutting. It is doubtful, however, whether a sharp knife, gently used and followed by chemical cauterization, is essentially less safe than more complicated methods.

The influence of the location and size of a given lesion is frequently the determining factor in the selection and technic of a particular method of biopsy. Foregoing detailed consideration, the following generalizations are submitted as of basic importance. Whenever the size, nature and location of a lesion, whether cutaneous, subcutaneous or mucosal, are such as to admit of its complete and wide removal without mutilation and without resort to major surgical intervention, such complete removal is decidedly preferable to a biopsy. Again, every biopsy, whatever its location, should be conducted with all the care of a major surgical procedure with reference to strict asepsis, sharpness and appropriate selection of instruments, adequate exposure and illumination, and with the greatest precision and gentleness in technic. The danger from frequent or rough palpation of tumors or lymph nodes holds with equal force in the manipulations incidental to removing a biopsy specimen. Lastly, a clear description of its source, its relation thereto and the method by which it was obtained should accompany every biopsy to the pathologist who is to examine it.

SECTIONING AND STAINING OF BIOPSIES

It is not within the province of this paper to discuss the details of sectioning and staining methods, but it is necessary to emphasize the importance of using some method of quick fresh frozen sections followed by a method for permanent fixed preparations. At the present time, the fresh frozen method or vital staining method is necessary to show, as MacCarty has pointed out, the characteristics of the living cells and their relation to each other and to their stroma. Fixed permanent sections—the fixed frozen, the paraffin-embedded or the cellordine-embedded variety—are equally essential as a check on quick sections and for repeated study, review, filing and photomicrography. When tumors prove to be unusually soft and cellular, with relatively little stroma, Warthin's method of quick fixing and embedding may be used to advantage, as a substitute for the frozen section.

Methods vary according to country, locality and institution, but the essential thing is for the pathologist to try various methods as they are proposed without prejudice and then choose the fresh frozen method and the fixed tissue method he can use most effectively from the standpoint of his training, experience and equipment.

It has always been a disadvantage for the pathologist to leave the operating room to cut the tissue and prepare the sections. In 1927 Bloodgood³⁹ developed and described a table with wheels equipped for carbon dioxide freezing sectioning and staining. It could be wheeled from one operating room to another. The advent of the dry-ice freezing stage for the microtome has greatly simplified and reduced the bulk and weight

37 Martin H F and Ellis E B. Biopsy by Needle Puncture and Aspiration. *Ann Surg* 92: 169 (Aug.) 1930.

38 Hoffman W I. New Technic and Instrument for Obtaining Biopsy Specimens. *Am J Cancer* 15: 212 (Jan.) 1931. Punch Biopsy in Tumor Diagnosis. *Surg Gynec & Obst* 56: 829 (April) 1933.

39 Bloodgood (footnote 9 fifth reference)

of the necessary equipment. If to the freezing, sectioning and staining equipment a simple projection apparatus is added, the pathologist can readily do all his work in the operating room, and a microscopic section may be demonstrated to the entire operating team, thus adding to the knowledge of the case in hand, as well as teaching and stimulating interest in pathology.

THE RELATION OF BIOPSY TO TREATMENT

In spite of the perennial outcroppings of serum, chemical and endocrine, and other alleged cures for cancer, thorough surgical excision, radium or the roentgen rays singly or combined remain the only three weapons in cancer therapy that have stood the test of time and of accumulating accurate follow-up records. Their acceptance today is general and almost axiomatic, and much progress has been made in convincing the public and the medical profession of the advantages of their early use. It is not as generally recognized that the first attack on cancer not only should be early, but should be complete in kind and scope for the particular lesion. Nor is it recognized that in the estimation of such mass-attack treatment, biopsy information is of vital importance. The work of Broders,⁴⁰ Ewing⁴¹ and Regaud and Lacassagne⁴² tends to show that an adequate morphologic study of a tumor will indicate its histogenesis and degree of malignancy, including the metastasizing power and radiosensitivity. Hence this feature of the biopsy assumes an importance in our fight for better results in cancer therapy second only to that of educating the medical profession and the public to early and correct diagnosis.

CONCLUSION

A consideration of the interrelationships of the various aspects of the question of biopsy on which we have just dwelt indicates clearly the ideal conditions under which they may be obtained, namely, the tumor clinic, operating either as a separate hospital or perhaps better as a complete unit of a general hospital where surgeon, pathologist and radiologist, backed by optimum equipment and freed to some extent from encumbrances of other work, may cooperate to give patients by far their best chance of a cure. At present, owing to the prohibitive expense of complete equipment, these ideal conditions exist in so few places that they are available to a relatively small percentage of all patients with cancer.

Further consideration also suggests that there are distributed throughout this country enough hospitals with adequately trained pathologists, surgeons and radiologists sufficiently accessible by modern methods of transportation to offer to a high percentage of patients with cancer, quick biopsy, adequate surgical treatment and, for many, adequate irradiation treatment. Where such facilities exist there is little excuse for making use of a delayed biopsy.

There remain, however, far too many patients with cancer living where such facilities do not exist to disparage or condemn entirely the delayed biopsy. Its field of usefulness, however, is limited, and it should never be resorted to merely for the sake of establishing a diagnosis, i. e., never without some plan for treatment mapped out by the physician and accepted in

advance by the patient, should the diagnosis indicate a malignant condition.

SUMMARY

1 The worth of the biopsy in diagnosis, prognosis and as an index for treatment is at present thoroughly and soundly established.

2 Properly conducted, its lack of danger is likewise established. Its few contraindications are well known and recorded.

3 Its status as a technical procedure, though clearly allowing of future improvement, has attained a satisfactory level of combined simplicity in procedure and materials and of reliability in preparation.

4 Its opportunities for future development and practice under optimum conditions lie largely in stimulation of interest and furnishing of facilities for more pathologists and surgeons to devote the time and hard work necessary to perfect themselves in the difficult field of tumor pathology.

ABSTRACT OF DISCUSSION

DR WILLIAM CARPENTER MACCARTY, Rochester, Minn. Biopsy as an essential part of diagnosis has been a major principle in the Mayo Clinic for over a quarter of a century. It has four distinct functions: differential clinical diagnosis, research, prognosis and the direction of therapy. Since there are no reliable clinical or serologic tests for the recognition of early cancer and since cancer is frequently associated with chronic inflammatory conditions, experience has taught that biopsy is our only means of making differential diagnoses in many instances. In practice we have adopted the following rules: 1 Every chronic sore or lump recently acquired which does not disappear or become smaller or show signs of disappearance after two or three weeks of local noncorrosive treatment, rest, local antiseptic and general hygienic care should be subjected to biopsy. It should be excised if possible rather than incised. 2 The removal of tissue for biopsy should not be done unless the one who does it is capable of performing the radical operation in case malignancy is found or unless he is in close immediate proximity to some one capable of completing the operation. 3 The biopsy should not be performed, as a rule, on small doubtful lesions located near epiphyseal lines in children. There are, perhaps, rare exceptions to this rule. 4 Biopsy should not be undertaken if the immediate and ultimate operative risks are greater than the possibility of cancer. 5 Tissue may be removed by incision of the sore or lump if this is large and thought to be a hopeless condition with only a small chance of its not being malignant. Immediate radical operation should follow the diagnosis if past experience shows that radical operation will prolong useful life or make even a short life free from lingering suffering otherwise it is unnecessary. 6 Biopsy is often dependent on surgical exploration of body cavities in which some unrecognizable but incapacitating pathologic condition is known to exist. Differential clinical diagnosis in these systems is becoming more difficult and experience with surgical exploration shows that many small cancers are being found. In the hands of well trained operators, exploratory risks are relatively small. The conservative surgeon is apt to refrain from exploration unless the patient is at least partially incapacitated or unless roentgenologic studies show a definite lesion in one of the systems or unless there are no roentgenologic signs and the patient's incapacity is increasing despite ordinary non-surgical treatment.

DR MAX CUTLER, Chicago. It has been said that when a patient consults his physician for cancer the first move on the part of the physician determines the patient's fate. I subscribe to that and therefore believe that the question of biopsy occupies a predominant place in the entire scheme of cancer diagnosis and treatment. It is for that reason that I particularly welcome the detailed and elaborate preparation and thought that Dr McGraw and Dr Hartman gave to this subject. The presentation of this subject has been so comprehensive that it is exceedingly difficult to add anything to it. I would emphasize several practical points in relation to biopsy. When the lesion

40 Broders A. C. Squamous Cell Epithelioma of the Lip. J. A. M. A. 74: 656 (March 6) 1920.

41 Ewing James. Neoplastic Diseases. ed. 3. Philadelphia. W. B. Saunders Company. 1928.

42 Regaud C. and Lacassagne A. The Histophysiological Effects of the Roentgen and Becquerel Curie Rays on the Normal Adult Tissues of Higher Animals. Arch. Inst. du Radium de l'Univ. de Paris. 1: 1. 1927. Regaud C. Value of Institutions for Radium and X-Ray Treatment. Surg. Gynec. & Obst. (supp. 11) 44: 116. 1927.

is very small (0.5 or 1 cm in diameter) the question arises as to whether it may not be best to remove the entire lesion rather than incise it. Under this circumstance the diagnostic and therapeutic measures are combined in one procedure. When the lesion is very small clinically and one has observed a sufficient number of them, one can often predict with considerable accuracy that microscopically there will be found a so-called borderline structure. Those who possess sufficient clinical experience and adequate familiarity with the pathology of tumors may treat such a lesion with biopsy if irradiation is to be used. That, I think, represents one possible exception to the general rule of performing biopsies. Thus the possible danger of biopsy may be avoided. When a breast tumor is large, the error is frequently made of performing an inadequate local excision of the tumor under the false impression that the mass is being excised widely. I should like to ask the authors whether they do not think that under those circumstances a very careful incision into the tumor, as Dr Halstead formerly practiced, phenolizing the wound and changing the instruments, is not safer than the unsuccessful attempt to remove a large tumor widely for diagnosis. Finally, there is the question of exploratory biopsy, if one may call it that. A patient I saw had a large tumor of the thigh. The clinical impression was that the lesion was a fibrosarcoma. I hesitated whether to incise over that region because of the possibility of disturbing the capsule. I decided to perform a biopsy, with the result that when the fascia was incised it proved to be a deep-seated lipoma. Thus the true diagnosis is sometimes established by gross examination after exploratory incision.

THE AUTOPSY PROBLEM

ITS SOLUTION IN SMALLER COMMUNITIES

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Medical schools of the better class are usually, though not invariably, located in large communities and here the study of medicine tends to be centered. The examination of the dead is an important part of this study, hence one finds the autopsy work largely concentrated in these centers. Conversely, most of the smaller communities have no medical schools nor any direct connection with them. Furthermore, the patients are for the most part private, pay, patients, the family doctor is more or less intimate with the members of his community, he is not stimulated by a great teaching institution and the research spirit it engenders, he may even shrink from exposing the mistakes which he and all of us make. These things tend to make the autopsy the unusual rather than the routine procedure in these communities.

Even the large standardized hospital frequently has difficulty in obtaining permission for the postmortem examination of the required 15 per cent of its deaths and many of them are able to do so only because of the constant pressure on them by the American Medical Association and the threat of losing the name of 'class A hospital.'

In smaller hospitals, in smaller communities without the proper support of their staffs and often without or with only a part time and perhaps insufficiently trained pathologist, the problem is still greater. The need of educating the profession to want and demand autopsies and of educating the public to understand the benefits to be derived from this service is the greater, the smaller the community.

Davidsohn¹ has recently pointed out some significant facts in regard to the number of autopsies performed

that the number has been markedly increased in a certain class of hospitals apparently as a result of the drive for standardization by the American Medical Association, that regardless of this increase probably less than 2 per cent of all dead are examined post mortem, that therefore 98 per cent of vital statistics are totally or highly unreliable.

He expresses the opinion that the movement is doomed to failure or a very mediocre success as long as the whole load is shouldered by the medical profession and believes that real success is dependent on making the public view this work as a public health problem. This, of course, means laws compelling submission to autopsy the same as they now do to quarantine and other preventive measures in public health. He further points out the necessity of education beginning in the ranks of the medical profession.

With these facts in mind I am going to describe the methods used in Lincoln, Neb., and set forth the results obtained. I hope these methods and results may encourage other groups of physicians to greater effort in obtaining autopsies and perhaps suggest a plan whereby this larger number may be done with the least cost and the greatest benefit to the physician, the hospital and the public we serve.

Our problems in Lincoln were much the same as in smaller cities with no medical school connections. For years there was only an occasional postmortem examination. These were done by individuals relatively untrained in pathology. There was inadequate examination of the bodies and very poor and incomplete histologic study. The information obtained was seldom correlated with the clinical aspects of the case and, if so, it was not a staff function in our hospitals.

With the addition of new hospitals and the determined efforts at standardization, part time pathologists were added to the staffs and conditions improved somewhat. This improvement was, however, largely in the number of autopsies performed. Standard methods of performing the examinations, adequate records, thorough histologic examinations of the tissues, preservation of museum specimens and, perhaps as important as any or all of these, the correlation of clinical and pathologic observations as a staff function, were not carried out or were done very poorly.

Under these conditions, not only were relatives of the deceased difficult to convince of the need, but the majority of the physicians were only tolerant or totally uninterested in obtaining autopsy permission.

Another very important factor was the mortician. With varied personnel performing autopsies, using a medley of methods, and often scornful of the rights of the embalmer, there was constant discord. It came to be almost axiomatic that unless permission was obtained and an autopsy started before the family and mortician could consult about the matter, there could be no autopsies.

Realizing these facts, the three Lincoln hospitals, Saint Elizabeth's, Bryan Memorial and the Lincoln General, united in a definite plan as follows. Each hospital contributed the sum of \$50 a month to a common fund. With this fund a central laboratory, known as the Hospital Laboratory, was set up and maintained in the Lancaster County Medical Society quarters in conjunction with a museum and medical library. A full time technician was employed with the addition of a part time stenographer.

The technician's duties have included the routine care and preparation of tissue for microscopic study, taking

¹ Davidsohn, Israel. *The Autopsy*. An Outline of the Problem. *Am J Clin Path* 3: 199 (Mar) 1933.

of notes as dictated at the autopsy, a part of the other stenographic work, the filing and indexing of museum materials, and the preservation of museum specimens, though further work on these, such as mounting, is done by others.

Autopsy teams consisting of the autopsy surgeon and an assistant were gradually developed. At first there was one so-called team. In time the assistant became a number one man and another assistant was added for each autopsy surgeon until, at the end of nearly five years, seven such teams are carrying on this work. Interns from the hospitals are also used as assistants as often as possible. I think that the criticism now being made that these are relatively untrained pathologists is a point well taken. However, full time pathologists were not available nor could they be paid. All the men who have entered this work were previously trained in some degree, were highly interested in this kind of work and, of still greater significance, were willing to follow an established routine and study the job. They have all worked without other remuneration than the knowledge to be obtained and the expression of their loyalty to their respective institutions.

These autopsy teams have constantly worked toward standard and uniform methods of doing and recording the results of the examinations. The records are all read and corrected to conform to the adopted standard by the one who has charge of this work. After correction three copies are typed, one of which is filed in the museum, another returned to the hospital and the third given to the attending physician. The work is not limited to the hospitals but any physician in the Lancaster County Medical Society may ask these teams to do his autopsies. It is interesting in this connection that approximately one third of the autopsies done by this setup have been outside cases, that is, cases not having been in one of the hospitals.

The examination of the microscopic sections has been done largely by one man. During the last year, however, two other men have gradually taken over a part of this work, so that in the coming year it will be about equally divided among the three. All sections are filed in the museum and indexed. A system of cross indexing of tissues has not been carried out because of lack of help and funds, though this will be done in time.

I want to return at this point to the situation regarding our relations with the morticians. We gradually made friends with them by making concessions. One by one they were convinced that we desired to work with them rather than against them and that to this end we would make certain concessions if they would. We agreed that the undertaker should inject the circulation before the autopsy, and in return he abstained from using a trocar in the cavities and the heart. In addition, most of them tried various embalming fluids to find the one that left the tissues most nearly natural in color and consistency. There are embalming fluids that cause practically no change in these characteristics and that do not damage the tissues from the standpoint of histology. They are no more difficult to use but are somewhat more expensive.

Furthermore, we have tried always to avoid so far as possible any unnecessary mutilation or the production of marks that cannot be covered in preparing the corpse for the inspection of friends and relatives. As a result of these things the morticians are now of the greatest help to us. They often obtain autopsy permissions that we have been unable to get, in fact, they

have obtained permission in cases in which no permission has been asked.

The depression has caused us some trouble and a good deal of anxiety. In April, 1932, Saint Elizabeth's Hospital had to withdraw its support and we were soon informed that the other two would do likewise, though the Bryan Memorial continued until June 1 and the Lincoln General until Sept. 1, 1932. In order to avoid losing the results so far obtained, a number of physicians immediately agreed to donate from their private funds enough money to maintain the laboratory and pay the technician half time, and the laboratory proposed to the hospitals that we continue to do their work just as we had, so far as possible, until such time as they could again contribute to its support. This was accepted by all but one hospital. This one has carried on its own work since April 27, 1932. With the others there has been no break in continuity. I am detailing this because of its effect on the statistics about to be given.

During the four years and five months from Feb. 1, 1929, to May 31, 1933, this central laboratory has performed 599 autopsies. The one hospital that preferred to carry on independently for the present has performed an additional 58 from April 27, 1932, to May 31, 1933. This is a total of 657. During this period there were 3,971 deaths in the city of Lincoln. Therefore, autopsies were done in 15.5 per cent of all these deaths.

Of the 657 autopsies performed, 480 were from the three hospitals. During this period 1,438 patients died in these hospitals. Therefore, autopsies were done in 33.4 per cent of these deaths. The proportion of autopsies at each of the hospitals for the whole period is as follows: at St. Elizabeth's, 28.1 per cent, at the Lincoln General, 30.7 per cent, and at the Bryan Memorial, 49.1 per cent. The proportion of autopsies on all other deaths in Lincoln for this period is 7 per cent.

In addition to the data accumulated in this manner and filed and indexed for the use of any member of the county medical society, much of it is studied very thoroughly and used in clinicopathologic staff conferences at the various hospitals. For example, during 1932-1933, sixteen such conferences were held at which thirty-two cases were presented in detail both clinically and from the standpoint of pathology. These conferences are among the best attended medical meetings we have, bearing evidence of the present interest of the doctors in our community in the autopsy as a teaching possibility. Further evidences of the interest they have developed as the result of this scheme of carrying on the work are the effort put forth to obtain autopsy permission and the generosity of the physicians as a whole in helping sustain the laboratory financially during the depression.

SUMMARY

Lincoln, a moderate sized city, without a medical school, has by the method outlined developed such interest in autopsies that over a period of fifty-three months we have done 657 autopsies with complete records, examined and recorded the histopathologic observations, and properly correlated the clinical and pathologic observations in a large number of them as a staff function of our hospitals. This constitutes an autopsy percentage of 15.5 on all deaths in the city for this period, which is over eight times the general average in the United States and 33.4 per cent for all deaths in the three hospitals for the same period, or

well over twice the percentage required for standardization

CONCLUSIONS

- 1 There is great need of increasing the number of well done and well studied autopsies, especially in the smaller communities
 - 2 To do this the medical profession must be made autopsy conscious and the autopsy must be made interesting and profitable to the physician
 - 3 The cooperation of the mortician is necessary, it can be had and it is invaluable
 - 4 A plan such as the one adopted in Lincoln is workable and could be adapted to almost any community
- Sharp Building

CANCER-LIKE LESIONS OF THE UTERINE CERVIX

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Every year in the Gynecological Pathology Laboratory of the Johns Hopkins Hospital a few histologic lesions of the cervix are encountered which in certain respects suggest carcinoma and which at times evoke differences of opinion among the staff members as to their benign or malignant nature. Judging from the interesting "suspicious" sections sent to the laboratory from other clinics, it is obvious that others are encountering the same difficulties. The easiest course to follow in a case of uncertain histologic diagnosis is to appease one's scientific conscience with the thought

vinced that hundreds are sacrificed annually which might be saved if pathologists generally were more familiar with the finer nonmalignant changes in the cervix as well as the earliest histologic signs of malignancy. When one appreciates the fact that panhysterectomy and the bilateral salpingo-oophorectomy which usually accompanies it, when done for malignancy, is



Fig 2—Portion of cervical polyp showing marked epidermization. The epithelial strands lie deep within the stroma of the polyp the surface of which is covered with columnar and atypical squamous epithelium.



Fig 1—Curettings showing plaques of stratified squamous epithelium obtained from the cervix. This was erroneously considered carcinoma.

that if the lesion is not cancerous it may be "precancerous" and should therefore be removed. As a result of this method of reasoning I have examined several uteri that had been removed unnecessarily and am con-

vinced that hundreds are sacrificed annually which might be saved if pathologists generally were more familiar with the finer nonmalignant changes in the cervix as well as the earliest histologic signs of malignancy. When one appreciates the fact that panhysterectomy and the bilateral salpingo-oophorectomy which usually accompanies it, when done for malignancy, is

an operation which carries with it a definite mortality and morbidity, it is apparent that womankind is suffering because of the profession's incomplete knowledge. The same may be said of the unnecessary use of radium, which at times carries with it a morbidity which should not be lost sight of when advising its use. At this point it may be advisable to scrutinize the meaning of the much abused word "precancerous." On reviewing the literature, one is struck by the loose manner in which this word is used. Gynecologists refer to lesions as "precancerous" when they have no further evidence of their precancerous nature than the fact that they somewhat resemble cancer histologically. How, then, should the term "precancerous" be employed? If a certain lesion invariably becomes cancerous, if unmo- lested, it must be considered as representing an early stage of actual cancer, even though histologically the significant cell changes in that stage may as yet be unrecognizable. For a lesion to be considered "pre- cancerous" it must be established that the incidence of carcinoma developing in such cases is greater than that of carcinoma in persons free from such a lesion. As an example of a lesion now definitely recognized as precancerous one might cite leukoplakia of the vulva. Taussig showed that carcinoma of the vulva was preceded by leukoplakia in over 50 per cent of the cases in his series. This clinical association of the disease is further substantiated by Smith and Graves, who found on examination of twenty-one specimens of vulval carcinoma that sixteen also showed leukoplakic

changes To a lesser degree, cervical lacerations with the resultant chronic cervicitis may, in a sense, be considered precancerous, as is shown by the high percentage of parous women among victims of this disease (Graves, 90 per cent, Cullen,¹ 98 per cent, Sampson, 97 per cent) There is also clinical evidence to show that eradication of cervical infections decreases the

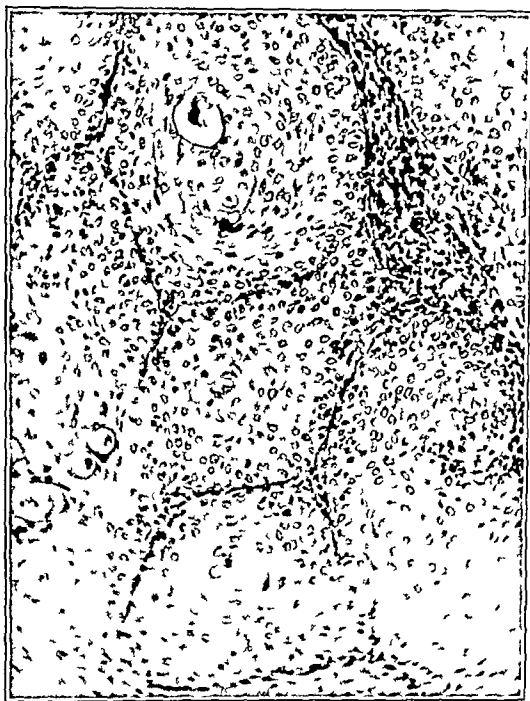


Fig 3—High power magnification of deep lying strands of epithelium The cells are uniform in type except as they become flatter and concentrically arranged near the center of each strand, forming pearl like patterns No mitoses are present

incidence of carcinoma For example, Smith and Pemberton² state that in their series of 1,408 cervical cauterizations none of the patients were known to have developed cervical cancer It is thus obvious that there is clinical evidence that inflammatory lesions of the cervix predispose that organ slightly to carcinoma, and in that sense they may be considered precancerous It is, however, one thing to recognize this clinical fact and quite another to establish a histogenetic relation between certain inflammatory lesions of the cervix and carcinoma

A review of the literature reveals many reports of cancer-like lesions of the cervix Among others, the report of Stone³ is noteworthy This shows excellent photomicrographs of lesions designated as "precancerous" On studying the text, however, one finds that no evidence is presented to prove that any of these lesions subsequently became carcinoma Novak⁴ has called attention to cancer-like lesions which he considers benign He states, however "As we have not as yet made a follow-up analysis of our cases from this standpoint, I can for the present give only impressions rather than actual facts"

¹ Cullen T S Cancer of the Uterus New York D Appleton & Co 1900 Early Squamous Cell Carcinoma of Cervix Surg Gynec & Obst 33 137 (Aug) 1921

² Pemberton F A and Smith G V Am J Obst & Gynec 17 165 (Feb) 1929

³ Stone W S Tr Am Gynec Soc 41 470 1916

⁴ Novak Emil Pathologic Diagnosis of Early Cervical and Corporal Cancer, Am J Obst & Gynec 18 449 (Oct) 1929

As has been repeatedly emphasized by Meyer,⁵ the question of whether a lesion is malignant or benign can be determined only by the patient's subsequent clinical course There can be no controversy over this point of view In the present series my associates and I have followed the cases clinically and feel that the results are of value in determining whether or not any of these cancer-like lesions subsequently developed into actual cancer and whether the term precancerous may properly be applied to them Ewing has said, "It is not true that a pathological condition must be either cancer or not cancer It may be neither one nor the other It may be in the process of becoming cancer" One must admit the truth of this statement on theoretical grounds, but, as practical gynecologists, we wish to know whether or not a histologic picture of the cervix can be recognized which represents a transition from the nonmalignant to the malignant or whether a lesion exists which under certain conditions may become malignant The importance of biopsy in suspicious lesions of the cervix has been emphasized by Meyer, Kaufmann,⁶ Hirshberg, Cullen, Novak and others Hinselman, by the use of his colposcope, has enlarged the field of biopsy by uncovering many leukoplakic lesions suggesting malignancy which would escape the unaided eye In view of this increasing trend to employ biopsy in doubtful lesions, the gynecologic pathologist is called on more and more for a differential diagnosis in the very early pathologic changes To do this, he

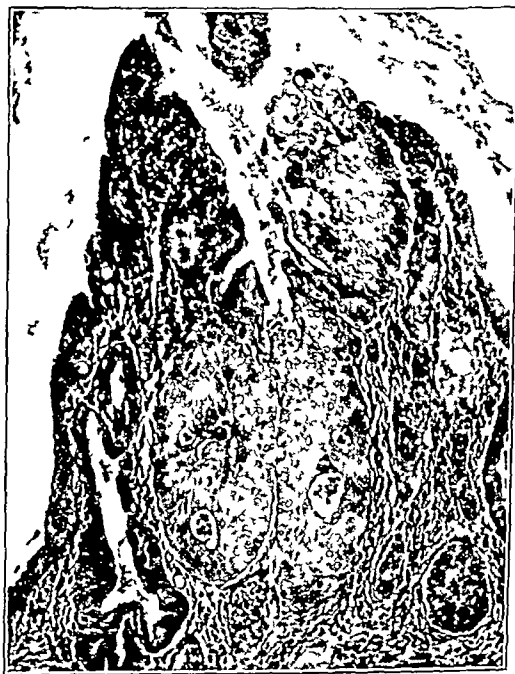


Fig 4—Epidermization of surface epithelium penetrating deeply into the stroma of the cervix

must be familiar with all lesions of the cervix, inflammatory, cancerous, cancer-like, and precancerous, if such a lesion as the last named is recognizable

The material on which this study is based is derived from histologic lesions encountered in the routine

⁵ Meyer Robert Zentralbl f Gynak 47 946 (June 16) 1923 Arch f Gynak 115 394 (Nov) 1922 91 579 1910 91 638 1910

⁶ Meyer Robert and Kaufmann C Zentralbl f Gynak 50 20 (Jan 2) 1926

examination of cervical tissue coming to the laboratory. The microscopically suspicious lesions were found in twelve instances in cervical polyps which were simply twisted off, no attempt being made to remove the tissue radically about the base of the polyp. The lesions were accidentally found in tissue removed at trachelorrhaphy in three and at amputation of the cervix in one case.



Fig 5—Marked epidermization of surface epithelium in cervical canal which invades the stroma deeply. The individual cells show no evidence of malignancy.

Results of Operations

Case	Operation	Result	Time Elapsing
1	Removal of cervical polyp	Well	2 yrs
2	Panhysterectomy, resection of cyst of right ovary, appendectomy	Well	1 yr 6 mos
3	Dilation and curettage, removal of cervical polyp	Died of hemiplegia	3 yrs
4	Vaginal panhysterectomy	Well	2 yrs 6 mos
5	Removal of cervical polyp	Well	3 yrs
6	Trachelorrhaphy, perineal repair	Well	4 yrs
7	Removal of cervical polyp	Well	2 yrs
8	Removal of cervical polyp	Well	4 yrs 3 mos
9	Removal of cervical polyp	Well	1 yr 6 mos
10	Panhysterectomy, double salpingo oophorectomy	Well	4 yrs
11	Removal of cervical polyp	Well	3 yrs
12	Removal of cervical polyp	Well	1 yr
13	Vaginal panhysterectomy, posterior colporrhaphy	Well	1 yr 9 mos
14	Biopsy (cervix)	Well	1 yr
15	Trachelorrhaphy, dilation and curettage	Well	1 yr
16	Panhysterectomy, left salpingo oophorectomy	Well	3 yrs
17	Trachelorrhaphy, dilation and curettage, appendectomy	Well	3 yrs 8 mos
18	Removal of cervical polyp, supravaginal hysterectomy	Well	10 yrs
19	Removal of cervical polyp	Well	4 yrs
20	Amputation of cervix, repair of cystocele	Well	4 yrs 6 mos
21	Removal of cervical polyp and ovarian cyst	Well	8 yrs 9 mos
22	Removal of cervical polyp	Died of embolism following broken hip	7 yrs
23	Dilation and curettage	Well	2 yrs
24	Panhysterectomy		

In one instance the tissue was removed for biopsy of a suspicious cervical lesion and in one instance by curettage. In six cases the routine examination of cervixes removed by panhysterectomy showed cancer-like lesions. From all such cases several blocks were cut and several sections studied from each block in an

attempt to find unmistakable cancer in the same cervix, with the idea, particularly, of tracing continuity between the cancer-like lesions and true cancer. In none of the instances was definite microscopic cancer encountered. In this way we have attempted not only to check up our histologic diagnoses but also to learn the true significance of questionable cervical lesions. The patients were followed for from one to ten years. The accompanying table shows the results of these investigations.

It is obvious from the examination of the table that there is no evidence that any of these patients subsequently developed carcinoma of the cervix. In the cases in which polyps were removed or in which tissue was removed for biopsy or by trachelorrhaphy, the theoretical objection might be raised that these simple procedures removed the "precancerous" tissue and hence one would not expect a subsequent development of carcinoma. That this objection is not valid, however, is shown by the fact that these changes, when present in the cervixes removed by panhysterectomy, were not usually localized at one point but could often be demonstrated at several points in the same cervix. It is therefore not likely that the simple procedure of biopsy, trachelorrhaphy or removal of a cervical polyp would have taken away all of the tissue showing this change. In spite of this, none of these patients developed cervical cancer. Two died three and seven years, respectively, after the original operative procedure, but neither had shown symptoms of carcinoma. In the cases in which panhysterectomy was done, careful study of many sections failed to show undoubted carcinoma at any portion of the cervix. In specimen 23, sent to us from another laboratory, an erroneous diagnosis of carcinoma was made from the microscopic picture shown in figure 1. The plaques of stratified squamous epithelium, obviously removed from the cervix in performing the curettage, were taken as indicative of

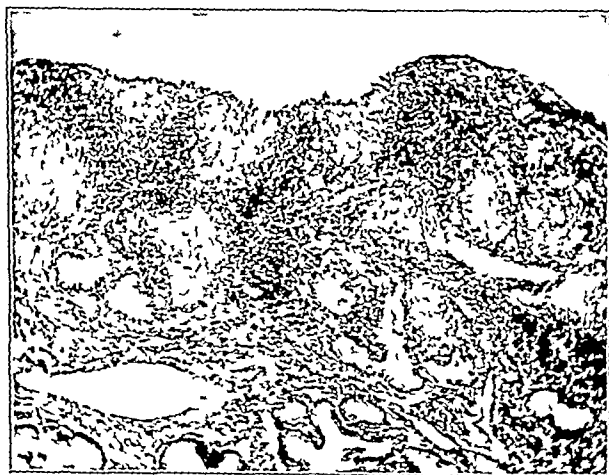


Fig 6—Isolated plaques of squamous epithelium buried deeply beneath the surface but high power magnification showing the individual cells to appear benign in character. There is marked round-cell infiltration.

malignancy, and a panhysterectomy was performed. Careful subsequent examination of the cervix failed to show evidences of carcinoma. The examination of the endometrium in the original curetting showed marked benign endometrial hyperplasia, which undoubtedly explained the symptom of bleeding.

I shall consider in some detail the histologic pictures presented by the cases followed in this series. The car-

cinoma-like picture may suggest epidermoid carcinoma or adenocarcinoma. The first variety is more frequently encountered. Figure 2 shows, under low magnification, a portion of a cervical polyp in which epithelium of the squamous type has gone far into the stroma. A



Fig. 7—Glandular lumen almost obliterated by the proliferation of epithelial cells of the squamous type

large portion of the surface of this polyp is covered with columnar cervical epithelium with scattered areas of so-called epidermization, that is, a replacement of cylindric epithelium by the squamous type. In places,

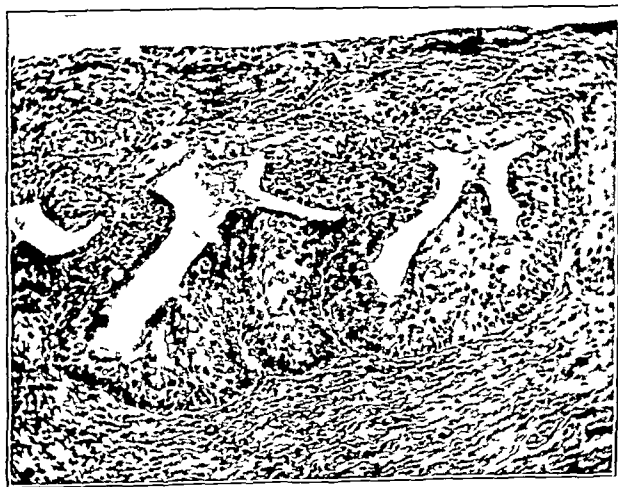


Fig. 8—Marked proliferation of squamous epithelium in the cervical glands pushing before it the columnar layer of cells which is preserved intact

a gradual transition of the columnar into the squamous type seems to be present. Under this magnification the picture is strongly suggestive of malignancy. Solid strands of cells lie deep in the stroma and in places these are apparently isolated from the surface epithelium. The general pattern of the growth is extremely

irregular, resembles no normal pattern, and suggests malignancy. Careful examination under higher magnification, however, is necessary to a final decision on this point. Figure 3 shows this deep-lying epithelium under sufficient magnification to observe the character of the individual cells. These are seen to be relatively uniform as to size, shape and staining qualities, except for a tendency to hornification toward the center of the individual strands forming pearl-like structures. A typical basal layer of cells, more or less columnar in type, such as is seen in normal cervical mucosa, is for the most part lacking. Scattered through the epithelium are several pyknotic nuclei, but large hyperchromatic nuclei as well as mitotic figures are not found. Hence under magnification sufficient to study the character of the individual cell one finds it difficult to consider this lesion malignant in spite of the first impression gained by inspection under low magnification. Its benign nature is confirmed by the fact that the patient has remained well for two years after the simple twisting off of the polyp.

Lesser degrees of similar benign invasion of the cervical stroma can be seen in figures 4 and 5. In figure 6, several apparently isolated strands of squamous epithelium are seen lying deep in the cervical stroma, but



Fig. 9—The adenomatous pattern formed by squamous metaplasia of cells lining the glands. This pattern is sometimes erroneously considered adenocarcinoma

under higher magnification these, too, show no cellular changes suggesting malignancy. On serial section several of these "isolated" epithelial areas can be seen to be continuous with the surface epithelium. The failure to establish continuity, however, by no means indicates malignancy, for inflammation and the resultant fibrosis may isolate strands of benign epithelium from the parent surface layer. Figure 6 shows a marked infiltration with round cells, indicating inflammation, the invariable accompaniment of the irregular epithelial proliferation. The downgrowth of squamous epithelium frequently follows a glandular lumen and many fill the entire passage with a solid cord of epithelium. Figure 7 shows such a process in which the lumen is partially obliterated. Often this epithelial proliferation takes place beneath the columnar epithelium of the glands, preserving the latter as the most superficial layer. This is shown particularly well in figure 8.

Another histologic lesion giving rise to confusion is an adenomatous picture somewhat suggestive of adenocarcinoma. Figure 9 shows such an instance under low magnification. Often this picture is seen deep

beneath the surface epithelium, which further suggests malignancy. Under higher magnification the process may be recognized as simply another form of essentially the same process of the epidermization described. The normal columnar epithelium lining cervical glands has been replaced by epithelium resembling the squamous type. The glandlike spaces of this adenomatous picture are in part actually gland lumens of cervical glands partially obliterated by the growth of epithelium. Other smaller lumens are simply the result of cellular degeneration. The lumens are often filled with cellular debris. Figure 10 shows such an adenomatous picture under higher magnification. Careful examination of the individual cells fails to reveal hyperchromatic nuclei or mitoses.

In the vast majority of cases these "cancer-like" benign histologic lesions are readily differentiated from early carcinoma, provided the pathologist is cognizant of their existence. In some, however, in which this epidermization is extreme, difficulty may be encountered



Fig 10—Higher magnification of adenomatous pattern showing proliferation of lining epithelium to two or three layers deep. In places solid strands of epithelium of the squamous type have been formed.

in arriving at a correct diagnosis. Early carcinoma may often travel into the depths of the cervix by way of glands in much the same way as benign squamous epithelium. Figure 11 shows such an invasion in a very early carcinoma accidentally discovered in a routine examination of a cervix removed because of lacerations and infection. At times a suspicion of malignancy will be aroused by the manner of invasion, which shows actual destruction of the columnar epithelium of the gland instead of a simple proliferation beneath retained columnar epithelium so frequently present in benign epidermization. When invasion of malignant epithelium is marked there is no difficulty in recognizing it as cancerous but in the earliest cases there may be nothing particularly characteristic about the malignant invasion to contrast it with a benign downgrowth of epithelium. So in the doubtful cases the decision frequently rests on a careful examination of the individual cells under high magnification. The

diagnosis of malignancy in the case shown in figure 11 must be made entirely on this basis.

Deviation from the normal as shown by irregularities in size, shape and staining qualities are all points in



Fig 11—Section from a very early carcinoma accidentally discovered in a cervix removed for chronic infection with fibroids. The pattern of the invasion differs in no way from that of the benign conditions pictured here. The diagnosis of malignancy is made entirely on the character of the individual cell changes.



Fig 12—High power magnification of small area from figure 10. The mitotic figures and hyperchromatic nuclei definitely establish the diagnosis of malignancy.

favor of malignancy. A retention of the normal differentiation of cells in squamous epithelium into the basal, transitional and spinal layers is a point against

malignancy. Its absence, however, does not necessarily indicate malignancy, for in the squamous epithelium formed by the process of epidermization this differentiation is often wanting. Hyperchromatic nuclei are suggestive of malignancy, and mitotic figures in the cervical epithelium are of great significance. The finding of both establishes a diagnosis of malignancy. Figure 12, which represents a small area of figure 11 under higher magnification, shows both mitotic figures

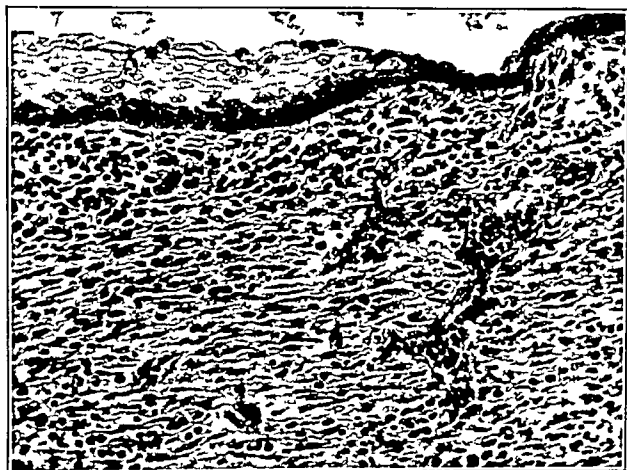


Fig. 13—The transition between columnar and squamous epithelium on the surface of an infected submucous fibroid which had its origin high up in the uterine cavity

and hyperchromatism. Such a picture would signify malignancy even if found in the surface epithelium entirely without evidence of invasion.

The presence of mitoses in various tissues of the body is of variable significance as regards malignancy. For example, mitoses are frequently seen in the epithelium and stroma of the endometrium in the postmenstrual stage. They are also encountered in benign hyperplasia of the endometrium. In none of the lesions studied in this series were mitoses found, in spite of a careful search. In discussing Martzloff's⁷ reported case of early carcinoma of the cervix, Cullen says: "We fully realize that nuclear figures do occur in the squamous epithelium, otherwise there could be no reparation when defects occur. But they are so uncommon that we have not encountered them in our routine work except where malignancy exists. We have also failed to note them in cylindrical epithelium of the cervix." H. R. Schmidt,⁸ however, has definitely demonstrated mitotic figures in regenerating cervical epithelium. He destroyed the cervical epithelium by cauterization, amputated the cervix six, eight, ten and twelve days afterward, and made microscopic studies of the tissue thus removed. Mitoses were frequent in the regenerating epithelium. Notwithstanding this experimental fact, experience has taught that they are extremely rare except in malignant cervical epithelium. A diagnosis of malignancy cannot be made on finding a single mitotic figure, but the identification of even one should call for a careful search, which will usually reveal several as well as other changes indicating malignancy.⁹

As to the etiology of these "carcinoma-like" microscopic pictures, there can be little doubt that inflammation is the essential factor in their production. We have never seen such a microscopic picture except in the presence of demonstrable infection. The same process of epidermization may occur in the mucosa of the body of the uterus, but always in the presence of infection. Figure 13 shows such a process in the endometrial surface covering an infected submucous fibroid. Rarely, the entire uterine cavity may become lined with squamous epithelium in the presence of severe chronic infection, particularly in elderly women. Figure 14 is a section of endometrium showing such extreme epidermization high up in the uterine cavity. The squamous epithelium may be of unusual thickness and penetrate deeply into the endometrial stroma. Cross sections of the penetrating processes may show pearl-like structures.

Concerning the origin of this squamous epithelium which replaces the columnar either in the cervix or in the endometrium, three possibilities may be considered:

1 The growth by direct extension of squamous epithelium from its normal habitat, replacing the columnar epithelium of the cervix or endometrium following the destruction of the latter by inflammation.

2 Transformation or "metaplasia" of adult columnar epithelium into epithelium of the squamous type.

3 The growth of squamous epithelium from embryonal rests of epithelial cells that have retained a potential power to develop into epithelium of the squamous type under the proper stimulus.

As in many pathologic lesions, a better concept of the origin may be obtained from early lesions rather than from those that are fully developed. Figure 15 shows small early lesions in which squamous-like patches are developing in the lumen of a cervical gland. The finding of such isolated patches of squamous epi-



Fig. 14—Surface of endometrium in which the columnar epithelium is entirely replaced by heavy stratified squamous epithelium. This epithelium in the presence of marked endometritis penetrates deeply into the endometrial stroma. The individual epithelial cells show no changes suggesting malignancy.

thelium apparently blending with the columnar type suggests a direct metaplasia of one type into the other, but Meyer would explain such a picture on the basis of the development of the squamous epithelium from an epithelial rest retaining the potential capability of developing into epithelium of the squamous type on the incitation of some stimulus such as inflammation.

⁷ Martzloff, K. H. Bull. Johns Hopkins Hosp. 33: 221 (June) 1922. 40: 160 (March) 1927.

⁸ Schmidt, H. R. Ztschr. f. Geburtsh. u. Gynak. 90: 48, 1926.

⁹ Since the completion of this study I have examined a biopsy section of a cervix which resembled the lesions of this series except that an occasional mitotic figure was present. The cells otherwise showed no changes suggestive of malignancy. The case will be followed with much interest but as no appreciable time has elapsed since the biopsy the exact status of this case cannot be evaluated.

These more or less theoretical considerations as to the origin of these microscopic pictures are interesting but possibly cannot be definitely proved. In mentioning them it is not my purpose to detract from the main clinicopathologic theme of this paper. It has been my purpose to call the attention of pathologists and surgeons to these histologic pictures which are at times confused with carcinoma and to remind them that, although the pictures are cancer-like, there is no real evidence that they are precancerous. It has further been my purpose to show that there is no justification for radical surgery solely on the basis of these microscopic lesions. When doubt exists after examination of biopsy specimens by competent pathologists, such



Fig 15—Glandular lumen showing three areas in which small plaques of squamous epithelium blend with the normal columnar epithelium lining of the gland. Areas such as this suggest a metaplasia of the columnar to the squamous type.

patients should be kept under the closest observation and a second biopsy instituted if necessary. It is only by carefully following such patients that the true significance of questionable lesions of the uterine cervix can eventually be learned. Further, it must be admitted that with present knowledge there is as yet no microscopic picture from the cervix which can justifiably be interpreted as a transition between the benign and the malignant.

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ABSTRACT OF DISCUSSION

DR. GEORGE H. GARDNER, Chicago: Dr. TeLinde has rendered a real service by directing attention to the histologic picture of cancer-like lesions of the cervix. He has presented clinical and laboratory proof that such conditions are benign and that patients harboring such lesions should not be subjected to radical surgical procedures or to heroic doses of radium. I wish that Dr. TeLinde had told more about the complaints which his patients presented of the observations and of the gross appearance of the lesions in the operating room. It would be interesting to know the results of the Schiller test and the colposcopic examination in these

patients. Such additions to the microscopic data would have made the picture complete. I hope that he will report them in a subsequent paper. From the standpoint of practical gynecology, a given lesion of the cervix must be considered either benign or malignant. It is not yet possible to recognize those features which denote that a benign lesion is passing over into a malignant cervical growth. Such a metamorphosis cannot be identified either grossly or in histologic preparations. After careful consideration of the patient's history and thorough, painstaking examination of the cervix under ideal conditions of relaxation, exposure and illumination one can almost invariably make a clinical diagnosis of cancer. The pathologist must be looked on as an invaluable consultant, not as a prophet. When he is confronted with a difficult microscopic picture, such as Dr. TeLinde has just shown, he should not be required to give an unqualified opinion based solely on the information which he can derive from one or two sections. The final diagnosis is more wisely made after a thorough review of all available information, history, physical examination and gross characteristics of the lesion, as well as its microscopic appearance. When competent gynecologic histopathologists disagree on the benignancy or the malignancy of a given section of the cervix, it can be concluded, with considerable assurance, that the growth is benign.

DR. RICHARD W. TELINDE, Baltimore: The reason the Schiller test and colposcopic examinations were not done in these cases was that the tissue in most of the cases was removed before colposcopic examinations and the Schiller test were in general use. At the present time careful histologic examinations together with follow-up studies should be done on a series of lesions found to be suggestive on colposcopic examination and with the Schiller test.

BENIGN LESIONS OF THE FEMALE BREAST SIMULATING CANCER

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Authorities on the subject of neoplasms of the breast are agreed that radical excision constitutes the accepted method for the treatment of all tumors of the breast which exhibit the clinical signs of cancer. This attitude has brought into prominence a group of innocent lesions of the breast accompanied by such classic signs of cancer as to lead to their radical removal under erroneous diagnoses. As the education of the laity has progressed and patients consult their physicians more often soon after the first signs of disease, the task and responsibility of the physician have been greatly increased both in diagnosis and in treatment.

It is the purpose of this communication to describe several innocent states of the breast which simulate cancer and discuss the diagnosis and treatment of some borderline conditions the exact nature and future course of which it is becoming increasingly difficult to estimate as they are encountered in their earlier stages.

PLASMA CELL MASTITIS

The term "plasma cell mastitis" has been applied by Ewing to an acute and subacute inflammatory state of the breast in which a rich plasma cell exudate often forms a striking microscopic feature. Ewing¹ was the first to call attention to the gross and microscopic features of this condition in the laboratories of the Memorial Hospital. These laboratory observations

Read before the Section on Pathology and Physiology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

¹ Ewing cited by Adair, F. E. Plasma Cell Mastitis—A Lesion Simulating Mammary Carcinoma. Arch. Surg. 26: 733 (May) 1933.

were followed by clinical studies by Adair² and myself, and these observations have been recorded in the literature. In a careful analysis of ten cases observed in the Memorial Hospital Adair has directed attention to the various phases of this disease.

I have reviewed the older literature and have failed to find reference to acute or subacute inflammation of the nonlactating breast with the exception of that complicating acute general infections such as typhoid fever and parotitis.

That the clinical features of this condition may have been noted previously is indicated by an isolated observation in which Courtin³ in 1899 presented before the Bordeaux Medical and Surgical Society a case of subacute mastitis simulating a malignant tumor of the breast. The patient was 50 years of age, and the menopause had occurred four years previously. The tumor had been present three months and possessed many of the classic features of cancer. It was firm and fixed to the skin. The nipple was retracted, and the axillary lymphatic glands were enlarged. The tumor was, however, exquisitely tender, and the skin was reddened and warm. The lesion was treated by means of local applications. After four weeks there was no evidence of disease, the tumor having completely disappeared. In the discussion of this case, Coquet referred to a similar observation. Neither of these clinical observations is supported by microscopic evidence.

In 1932 Cohn and Bloodgood⁴ reported a series of cases of nonsuppurative chronic lactation mastitis, some of recent origin, others appearing months or years after pregnancy. Microscopic study of the sections showed evidence of residual lactation in all the cases. I have recently observed a case of plasma cell mastitis in a woman aged 40, in whom there had been no previous pregnancies.

CLINICAL FEATURES

A breast which is not the seat of lactation may become acutely inflamed, and in its earliest stages the condition gives rise to a clinical picture simulating inflammatory carcinoma. The disease begins suddenly and is ushered in with pain, diffuse tenderness and redness of the skin. The entire breast becomes swollen, and the axillary lymphatic glands are enlarged and tender. There is usually some rise in temperature, sometimes accompanied by a chill. A creamy discharge from the nipple is occasionally noted. The most important differential point from inflammatory carcinoma is the absence of a dermal and subdermal thickening representing invasion of these sites by tumor cells.

The acute symptoms soon begin to subside, and the process enters a subacute stage, during which period the symptoms and signs mentioned are present in a diminishing degree and begin to disappear. As the inflammatory signs disappear and the swelling of the breast diminishes, there remains a mass in the breast which often presents many or all the classic clinical signs of cancer. The mass is solid firm and often adherent to the overlying skin, which is dimpled and the nipple is sometimes retracted. These clinical signs, accompanied by enlarged axillary lymphatic glands, justify a diagnosis of carcinoma. Actually, until this

syndrome became fully recognized, this error in clinical diagnosis occurred in every case that came to the attention of my associates and myself.

An interesting though confusing peculiarity of this disease is the slowness with which the tumor mass regresses. In several examples in which the patients were examined carefully at weekly intervals, it was discovered that a detectable regression could be determined only after intervals of from three to four weeks. The change, though definite, was so slow as to revive the suspicion that carcinoma was present. During this prolonged observation it is important to establish with certainty that the mass is diminishing in size as this is the crucial sign which enables it to be differentiated from carcinoma in this stage of the disease. The following case, which I had an opportunity to observe closely from the onset of the disease, is a typical example of this condition.

REPORT OF CASE

The patient was a woman aged 50. The last pregnancy had occurred twelve years previously. The patient had sudden pain and tenderness accompanied by redness and swelling of the right breast. The temperature was 100.2 F by mouth. The entire right breast was edematous and exquisitely tender. The overlying skin was red. In the central portion of the right breast was an indistinct, firm mass. The axillary lymphatic glands were enlarged and tender. As an abscess was suspected an aspirating needle was inserted into the center of the mass, and several drops of purulent-looking material were withdrawn. On microscopic examination, this material showed leukocytes and epithelial debris. The signs of acute inflammation disappeared after one week. As the edema of the entire breast subsided the mass in the central portion of the gland became more discrete. It measured about 6 cm in diameter. Examination at weekly intervals showed that the mass was diminishing in size. The regression was, however, so slow that eight weeks after the onset of the disease there still remained a mass 3 cm in diameter. The consistency of this mass was as firm as that of carcinoma and there was adherence of the overlying skin. Because of the presence of these signs and the failure of the mass to disappear after this long interval it was deemed unsafe to withhold exploration. A wide local excision was performed and microscopic examination revealed the typical morphologic appearance of plasma cell mastitis.

GROSS AND MICROSCOPIC FEATURES

Cross-section of a breast which is the seat of plasma cell mastitis shows numerous dilated ducts and minute cysts which, under pressure, exude a thick, creamy, puriform material. In some areas there may be soft, almost necrotic, grayish foci. The tissue often presents a peculiar, pink inflammatory appearance. Cicatricial areas and chalky points characteristic of carcinoma are absent. The process is diffuse, and no discrete tumor can be palpated except in the late stages of the disease when all acute and subacute changes have disappeared. Xanthomatoid foci varying from 1 to 3 mm in width may project from the cut surface. Because of the extreme induration and resistance, the tissues resemble carcinoma and a distinction between the two lesions by palpation alone is exceedingly difficult.

The essential microscopic changes consist of an active, acute and subacute exudative inflammation with numerous leukocytes, lymphocytes and plasma cells. The exudate is especially prominent about ducts and acini, where the cellular reaction may consist almost exclusively of plasma cells. Giant cells of a foreign body type are often present about these foci. These may be few in number, or they may form a striking part of the histologic structure. The dilated ducts are

² Adair F E. Gumma of the Breast. Its Differential Diagnosis from Cancer. *Ann Surg* 79: 44 (1924). Plasma Cell Mastitis—A Lesion Simulating Mammary Carcinoma. *Arch Surg* 26: 735 (May) 1933.
³ Courtin. Un cas de mammite subaigue simulant une tumeur maligne du sein. *Bull et mem Soc med et chir de Bordeaux* 1900, p. 292.
⁴ Cohn L C and Bloodgood J C. Chronic Lactation Mastitis. Suppurative and Non-Suppurative. *Am J Cancer* 16: 487 (May) 1932.

filled with desquamated epithelial debris. In some areas the epithelial cells undergo an intense malignant looking hyperplasia, which, in the frozen section, may be difficult to distinguish from carcinoma, but which on paraffin section proves to be confined within normal boundaries of ducts and acini (fig 1)

DIAGNOSIS

The most important diagnostic aid in differentiating plasma cell mastitis from carcinoma is the acute onset of the disease and its subsequent clinical course. During the initial stage the entire mammary gland is firm, indurated and diffusely tender. The skin is red and edematous, and the axillary lymphatic glands are enlarged, confluent and tender. There is moderate fever, and the patient presents the picture of an acute or subacute infection. From this state the clinical course is one of slow but continuous regression and not progression as invariably occurs in carcinoma. The disappearance of the acute and later the subacute inflammatory phases and the slow but definite regression of the tumor differentiate it from carcinoma. Thus it is important to emphasize that during the subacute or chronic stage a single examination leads invariably to an erroneous diagnosis, and it is only by a careful history of the onset and progress of the disease and by repeated periodic examination with actual measurements of the tumor that the true nature of the confusing and misleading cancer-like lesion can be established.

Plasma cell mastitis must be distinguished from (a) inflammatory carcinoma, (b) diffuse duct carcinoma and (c) traumatic mastitis.

In the first stages of plasma cell mastitis the clinical picture closely resembles inflammatory carcinoma. In inflammatory carcinoma however, the invasion of the subdermal lymphatics by cancer cells gives rise to an irregular thickening of the skin which is not present in plasma cell mastitis.

Diffuse duct carcinoma may simulate plasma cell mastitis, especially in the presence of a superimposed inflammation. The sudden onset, acute inflammatory signs and symptoms and regression of the lesion are the distinguishing features of plasma cell mastitis. Duct carcinoma is slowly but steadily progressive.

The interpretation of the histologic structure associated with plasma cell mastitis may be confusing and difficult particularly if a diagnosis is attempted by means of the frozen section. The disorderly and atypical epithelium often gives the appearance of having invaded outside structures when actually it is confined within normal boundaries. Another source of confusion is that large edematous plasma cells poorly fixed in the frozen section may resemble superficially small anaplastic carcinoma cells. Careful microscopic examination of these areas with the high power lens of the microscope usually establishes the true nature of these cells.

PROGNOSIS

Plasma cell mastitis is a curious, unexplained inflammatory process and tends to spontaneous regression and disappearance. I have observed a number of examples in which breasts presenting the aforementioned clinical features have returned to an apparently normal state. Courtin and Coquet reported similar observations in which local applications and rest were the only therapeutic measures. In most patients suffering from this condition the breasts have been removed under the

clinical diagnosis of carcinoma, and the true nature of the disease has been discovered only after operation. There is no evidence that this lesion bears any relation to mammary cancer. The intense epithelial hyperplasia which accompanies the acute inflammatory stage has remained confined within the normal boundaries of ducts and acini in all examples which I have studied.

TREATMENT

If the patient is seen during the acute stage of the disease, local applications and rest are the logical methods to adopt while the lesion is watched carefully. If the course of the disease confirms the diagnosis, operation should be withheld as long as there is discernible clinical improvement. If, after a period of observation, the lesion remains stationary or shows signs of progression and the diagnosis becomes uncertain, an exploratory operation should be performed unless the presence of inflammatory carcinoma is suspected. Operation during the acute stage of the process is contraindicated in any event, and neither a local nor a radical procedure should be attempted at this period.



Fig 1—Photomicrograph showing cross section of duct surrounded by a periductal inflammatory process consisting of lymphocytes, leukocytes and plasma cells. This inflammatory process occurred in a breast which exhibited all the classic clinical signs of cancer.

During the later stages, when all signs of acute and subacute inflammation have disappeared and a discrete tumor mass persists, wide local excision is the safest method to pursue. Two considerations lead to this position. First, excision of the mass removes a pathologic lesion, the future course of which no one can foretell, and, second, microscopic examination of the specimen confirms the diagnosis and rules out the presence of carcinoma.

TRAUMATIC FAT NECROSIS

Extraperitoneal fat necrosis was described by Shattock in 1896 in a lipoma of the thigh, and by Targett⁶ in a lipoma of the breast. According to Hadfield,⁷ who has reviewed the literature on this subject, Lanz,⁸ Heyde⁹ and Kuttner¹⁰ each observed

- 5 Shattock S G Saponifying Necrosis in a Lipoma of the Thigh, *Tr Path Soc London* 47 246 1896
- 6 Targett cited by Shattock⁵
- 7 Hadfield G Fat Necrosis of the Breast *Brit J Surg* 17 673 (April) 1930
- 8 Lanz Traumatic Fat Necrosis *Centralbl f Chir* 25 1253 1895
- 9 Heyde M Zur Kenntnis der subkutanen Fettgewebsnekrose *Deut'sche Zeitschr f Chir* 109 200 1911
- 10 Kuttner W Ueber circumscribte Tumorbildung durch abdominale Fettnnekrose und subcutane Fettspeicherung *Berl Klin Wchnschr* 1 9 1913

similar lesions in the subcutaneous tissues of the thigh and in abdominal and extra-abdominal fat. It remained for Lee and Adair,¹¹ however, to point out and emphasize the similarity between the clinical signs of fat necrosis of the breast and those of cancer. In a report of twenty cases, they established the disease as a clinical and pathologic entity (fig 2).

In 1930 Hadfield⁷ reviewed the literature and found forty-two fully recorded cases, to which he added three

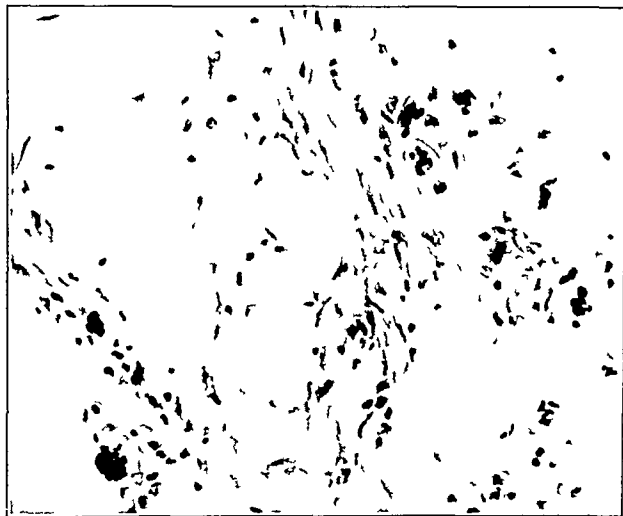


Fig 2—Photomicrograph showing foreign body giant cells, lymphocytes and plasma cells in a breast which was the seat of fat necrosis. This lesion induced all the clinical signs of cancer.

of his own. An additional case was recorded by Enzer¹² in 1931.

Traumatic fat necrosis is most common during the fourth and fifth decades, it has been noted in newborn infants and has been due to injury sustained at birth. It may or may not be associated with lactation. Hadfield found a definite history of trauma in 40 per cent of his cases, and Lee and Adair in 70 per cent. Pain and tenderness occur but are not constant. The mass which appears in the breast increases in size. The progressive increase in size, firmness and frequency of adherence of the skin suggest the presence of cancer to such extent that in 26 per cent of the forty-five collected cases (Hadfield) a radical amputation of the breast was performed. Retraction of the nipple occurs in 10 per cent of the cases.

The gross characteristics of the lesion are striking and depend on the stage during which the examination is made. On cross-section the surface is opaque and yellowish white and follows the contour of one or two fat lobules. The central portion of the lesion is frequently cystic, especially in the later stages, and contains an oily yellowish material. In older lesions there are usually small, chalky foci, and in still older lesions, punctate areas of calcification may be discovered.

In cases in which injury is a prominent feature and in which the tumor seems to appear at the exact site of the trauma, I have found transillumination of the

breast a helpful diagnostic aid. The opacity under these circumstances is characteristic of hematoma and differs from the shadow cast by a solid tumor of the breast in which interstitial extravasation of blood does not occur. In several cases the patients were examined at repeated intervals over periods varying between three and six months. Coincident with the diminution in size of the palpable mass, transillumination showed a slow but continuous diminution in the extent and intensity of the opacity, followed by a complete disappearance of the shadow (fig 3).

FIBRO-ADENOMA (THE PRESENCE OF A SINGLE TUMOR IN ONE BREAST)

Errors in differential diagnosis between fibro-adenoma and carcinoma occur, as a rule, under two circumstances: (a) A small, circumscribed, movable isolated tumor exhibiting no attachment to the skin and no visible retraction of the nipple occurring in a young woman often leads to the clinical diagnosis of fibro-adenoma when actually the lesion is carcinoma, (b) a slowly growing, firm, circumscribed, movable tumor exhibiting no attachment to the surrounding structures in spite of its size, frequently situated close to the nipple and areola in the breast of a woman about 50 years of age, many times leads to the diagnosis of fibro-adenoma when actually the lesion is a duct carcinoma.

The only safe method to adopt under these circumstances is to regard the presence of a single tumor in one breast of a woman over 25 years of age as carcinoma until proved otherwise. Under no circumstances should an exploratory operation be performed unless the surgeon is prepared either alone or with the aid of a pathologist to establish the diagnosis at the operating table and proceed with the radical operation if carcinoma is discovered. The exploratory operation should be performed with all precautions against dissemination of tumor cells, and the line of excision



Fig 3—Photomicrograph showing fatty acid crystals surrounded by an inflammatory process including foreign body giant cells.

should extend well beyond the palpable tumor. The wound should be washed with corrosive mercuric chloride in a dilution of 1:500.

MULTIPLE TUMORS IN ONE OR BOTH BREASTS

The presence of more than one tumor in one or both breasts immediately throws the weight of evidence against carcinoma and favors the diagnosis of a benign lesion. Under these circumstances the diagnosis lies

11. Lee B. J. and Adair F. E. Traumatic Fat Necrosis of the Female Breast and Its Differentiation from Cancer. *Ann Surg.* 72: 189 (Aug.) 1920. A Further Report on Traumatic Fat Necrosis of the Female Breast and Its Differentiation from Cancer. *Surg. Gynec. & Obst.* 34: 521 (April) 1922. Traumatic Fat Necrosis of the Female Breast and Its Differentiation from Cancer. *Ann Surg.* 80: 670 (Nov.) 1924.

12. Enzer N. Traumatic Fat Necrosis of the Breast. *Am J Surg.* 12: 102 (April) 1931.

between two possibilities (1) multiple fibro-adenomas and (2) multiple cysts. When cysts are deeply situated and tense, fluctuation cannot be elicited, and this important differential sign is excluded. Transillumination usually helps to establish the presence of clear fluid cysts, but in exceptional examples an absolute decision as to the precise nature of the lesion may be impossible except by surgical exploration.

It is necessary to point out the importance of establishing the nature of the lesion under these circumstances. The subsequent history of fibro-adenomas that are not removed includes their enlargement, the development of cystic complications and the superimposition of sarcomatous changes. The occurrence of carcinoma in fibro-adenoma is very rare, as is also the sarcomatous transformation of fibro-adenoma.

On the contrary, cystic disease of the breast, especially when complicated by the neoplastic process giving rise to Schimmelbusch's disease, is a serious lesion. With few exceptions multiple palpable cysts in a breast are accompanied by smaller microscopic cysts. The extent to which the epithelial changes have progressed in the walls of such ducts and cysts is impossible to determine clinically. In fact, a malignant epithelial neoplasia which has transgressed its normal boundaries may already exist without giving clinical signs. In the presence of multiple tumors this event is rare but cannot be excluded.

The danger of multiple cysts is far greater than that of multiple fibro-adenomas, consequently a conservative surgical procedure is justified for fibro-adenomas and not for multiple cysts. One of the commonest errors that is made during operation on the breast is the attempted local removal of multiple palpable cysts, a portion of the breast which is the seat of numerous smaller microscopic cysts being left. The fallacy of this procedure is that once a cyst becomes clinically palpable, it is usually not subject to malignant change, as the epithelium in the larger cysts is usually degenerated. In the smaller cysts the epithelial cells are more active and respond more readily to whatever stimulus induced malignant transformation. To remove the larger cysts and leave the smaller ones is to remove the innocent lesions and leave behind the lesion in which carcinoma is most likely to be present or to develop subsequently.

These circumstances render it highly important to establish the differential diagnosis between multiple solid tumors (fibro-adenomas) and multiple cysts in order to plan the scope of the operation in the treatment of these patients.

When after palpation and transillumination, there still remains a doubt as to the diagnosis, the solid or cystic nature of the lesions must be established at operation.

Before proceeding with the incision, a fine needle inserted in one of the masses usually establishes the diagnosis. An incision over the mass down to the outside wall of the tumor reveals the blue dome of the cyst which Bloodgood has so often emphasized or the solid nature of the tumor when fibro-adenoma is present. When the solid or cystic character of the lesion has been established the line of procedure is clarified. For widespread cystic disease of the breast local mastectomy is the only sound procedure to adopt. I recognize that cystic degeneration may occur in fibro-adenomas but these tumors are secondary and do not constitute the essential process as do the cysts in primary cystic disease of the breast (Reclus' disease).

HEMORRHAGIC AND SEROHEMORRHAGIC DISCHARGES FROM THE NIPPLE (BLEEDING NIPPLE)

The problem of diagnosis and treatment of breasts exhibiting spontaneous seroheorrhagic discharge from the nipple is becoming increasingly difficult. Formerly, when patients complaining of this sign came under observation after a mass had already become palpable, the diagnosis of duct carcinoma was simple and the line of procedure clear. As the laity has become educated and warned, the majority of women who now come under observation for this sign apply for treatment so early that no palpable lesion can be detected in the breast. The diagnosis of duct papilloma is justified in these cases with the unfortunate exception that an extremely early duct carcinoma cannot be ruled out completely. I have seen one example of this type in a breast in which no tumor could be palpated.

Transillumination is a diagnostic aid in localizing duct papillomas in the breast. In some cases, however, the papillomas are so small that no shadow can be detected on transillumination. This is especially true when the discharge is essentially serous.

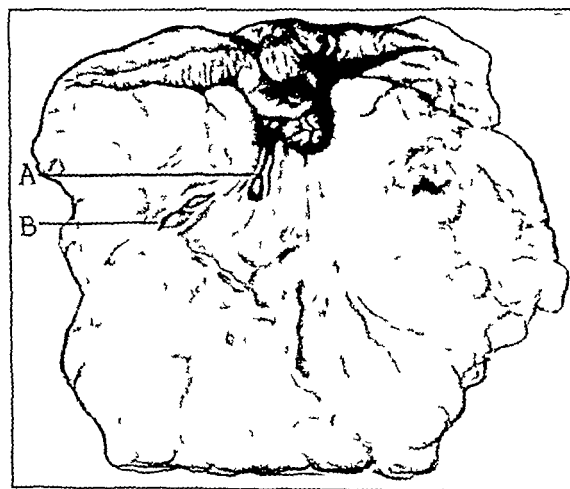


Fig. 4.—Drawing showing multiple duct papillomas (A and B) in the region of the nipple and the areola. No tumor could be palpated in this breast on clinical examination. Transillumination indicated opacities at these sites.

In older women in whom a hemorrhagic discharge from the nipple is more likely to be associated with duct carcinoma or in whom a duct papilloma is more likely to be complicated by carcinoma, especially in the presence of suggestive nodularity in the breast, wide surgical excision or local mastectomy is the safest method to adopt.

In younger women in whom the presence of carcinoma is less probable and to whom the loss of the breast is of greater concern, I do not feel justified in adopting such radical measures. On the other hand, I take the view that to permit such a lesion to remain untreated is a dangerous attitude to assume.

For younger women suffering from a serous or seroheorrhagic discharge from the nipple especially when localization of the lesion is impossible or uncertain, the only methods heretofore available have been either to institute no treatment or to remove the entire breast. Surgical exploration of the breast with an attempt to perform a local excision of the lesion is exceedingly difficult and frequently unsuccessful.

These circumstances led me to consider the feasibility of treating the underlying lesion by means of interstitial

irradiation (removable platinum needles) It seemed that this method, which has met with a certain degree of success in the treatment of mammary carcinoma, should be even more efficacious in the treatment of duct papillomas or of early duct carcinomas, should they exist This method possesses the advantage of avoiding removal of the breast in young women, to many of whom the surgical procedure constitutes a considerable psychologic shock It possesses the disadvantage of not permitting microscopic confirmation of the diagnosis The safety of this method as regards the future development of cancer is impossible to establish for many years

To me this method appears sound on the basis of knowledge of the effects of this treatment on lesions which are already fully developed cancers

Two patients suffering from serohemorrhagic discharge from the nipple who refused to permit any operative procedure have been treated by this method In both, the treatment resulted in complete cessation of the discharge for eighteen months and eight months, respectively This method is suggested in selected cases in young women A fuller report on this problem with details of dosage and technic is in the process of preparation

It is important to confine this method to a distinctly limited group of patients For the present it should not be executed in women with breasts in which subsequent lactation is likely to occur The method should be confined particularly to breasts exhibiting a serous discharge from the nipple in which no palpable tumor can be discovered, and particularly in which transillumination fails to reveal a shadow It would be exceedingly dangerous and unwise to apply this method indiscriminately to all breasts which are the seat of serohemorrhagic discharge from the nipple

ABSTRACT OF DISCUSSION

DR FRANK W. HARTMAN, Detroit For a good many years I saw papillomas in different parts of the breast particularly about the nipple and considered them benign I was taught to believe from my own work, that they were rather innocuous and that a bleeding nipple and the finding of a papilloma constituted a good prognosis More recently though, I have seen a number of breast papillomas that were benign in one area and malignant in another Last year I saw three of these papillary adenocarcinomas apparently developing on the basis of a papilloma of the duct, so that the papilloma question becomes much more important The question of a diffuse invasion of the duct and of malignant degeneration is to be kept in mind, rather than the old idea of a benign lesion without any danger of subsequent malignant degeneration

DR J. J. MOORE, Chicago I am sure that pathologists enjoyed hearing a pathologist tell of the difficulty that may be encountered in differentiating grossly similar breast conditions by rapid frozen sections I had a case of plasma cell tumor of the breast three months ago which clinically simulated a carcinoma and was diagnosed as such The lesion was just over the pectoral muscle The rapid frozen section here fortunately, made the diagnosis without much difficulty It did not have the marked hyperplasia that Dr Cutler showed in his last slide, which gives so much trouble at times in differential diagnosis I wish that Dr Cutler would discuss more fully the different procedures he would employ in multiple adenofibromas and in the cystic conditions Six months ago I saw a case of fat necrosis of the breast but this was in a case of carcinoma and followed a trauma, in which x-ray needles had been applied There were multiple areas of fat necrosis throughout the entire breast, some as large as 2 cm in diameter

DR J. SHELTON HORSLEY, Richmond, Va. The lesions that Dr Cutler has drawn attention to so vividly are extremely

interesting to the pathologist and also to the surgeon While I don't know very much about pathology, I examine tissues from my operative cases for the fun I get out of it I don't see how I could differentiate between cancer and hyperplasia in one of those slides that he showed The thing that seems to impress me more is that in both fat necrosis and in the inflammatory lesion there are practically always foreign body giant cells In any section in which one finds foreign body giant cells it might be well to be a little conservative in making a diagnosis of malignancy From the surgical standpoint, I am wondering whether the application of fairly intensive roentgen therapy in these cases would be of benefit Certainly it would be very helpful in carcinoma I am wondering whether this type of inflammation would not also be benefited by roentgen therapy such as, for instance, boils or similar inflammatory processes are

DR ARTHUR F. ABT, Chicago I should like to ask Dr Cutler whether he knows of any relationship between the type of plasma cell mastitis that he has described and the benign prepuberty breast hypertrophy or mastitis in children

DR MAX CUTLER, Chicago Dr Hartman has raised the important question of the treatment of bleeding nipple There have been diametrically opposite opinions among authorities on the treatment of hemorrhagic discharges from the nipple ranging from the one extreme that the lesion is innocuous and requires only observation to the other extreme presenting the opinion that complete mastectomy should be performed This divergence of views on a problem of such practical importance is unfortunate and confusing particularly to those who have had a limited experience with this type of lesion During the last few years the evidence that has accumulated has definitely caused a shift of opinion in the direction of regarding this sign with greater suspicion Most authorities now agree that the lesion underlying "bleeding nipple" is potentially dangerous and should be treated Although the lesion may not be carcinoma when first seen, I think that most observers are now of the opinion that it is a danger signal and potentially cancerous In two examples that I have seen an early duct carcinoma was already present although no tumor could be felt in the breast Dr Moore has raised the question of the difference in treatment of multiple fibro-adenomas and multiple cysts The prognosis of the former is excellent whereas the prognosis of the latter is problematic Having established that multiple lesions of a breast are fibro-adenomas I pursue a conservative policy Cystic disease of the breast is potentially dangerous and having established that nodularity is due to cysts I resect that portion of the breast which is the seat of disease or remove the entire breast when there is diffuse and generalized involvement The most frequent error that is made in this respect is to remove the palpable cyst which is the least dangerous and leave behind numerous microscopic cysts which not infrequently become the seat of cancer In response to Dr Horsley's question I may state that I have irradiated one breast which was the seat of plasma cell mastitis and found that the lesion regressed rapidly without suppuration In response to Dr Abt's question I know of no relation between plasma cell mastitis and mammary hyperplasia in the new-born The former is surely an infective process, and the latter distinctly a physiologic one In closing I wish to emphasize that the use of interstitial radiation for bleeding nipple must be limited to selected cases Until more data have been accumulated it is safest to confine this method to the treatment of patients who refuse operation It should not be employed in the treatment of a breast that may in the future become the seat of a lactation One disadvantage of the method is that the presence of carcinoma cannot be established or excluded microscopically as can be done by surgical excision The important question that remains to be answered is whether the irradiation is adequate to sterilize an early duct carcinoma should this state be present at the time of treatment

Two and a Half Colds a Year—Epidemiological studies indicate that on the average every man, woman and child in the United States experiences about two and a half colds each year—Dochez, A. R. A Limited Consideration of Certain Aspects of Acute Infection of the Respiratory Tract *Medicine* 12:245 (Sept.) 1933

AN UNUSUAL HEMATOLOGIC REACTION TO NEOARSPHENAMINE

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CINCINNATI

During recent years, numerous reports of blood dyscrasias occurring in the course of the arsenical treatment of syphilis have appeared in the literature. Although they are undoubtedly of rare occurrence, as indicated by Cole and his co-workers,¹ who found only two such complications in a series of 78,350 injections given to 1,212 patients, they are of sufficient interest to have attention drawn to them.

McCarthy and Wilson² recently reviewed seventy-nine cases and added two more of their own. From their analysis of this series they concluded that there are three main divisions into which these cases can be divided: (1) thrombocytopenic, (2) granulocytopenic and agranulocytic and (3) aplastic. The chief symptoms of the first group, purpura and bleeding, appeared immediately or within four hours in seven of the twelve cases, while the symptoms of the other two groups as

Stephens³ stated that it seemed probable that the temporary thrombocytopenia accompanied by slight transient decrease in the red and white cell count were due to peripheral factors rather than to any effect on the bone marrow. Jui Wu Mu⁴ found a temporary diminution in the number of circulating platelets in patients receiving neoarsphenamine. This diminution appeared in from ten to thirty minutes after injection and was followed within six hours by a slight compensatory thrombocytosis of from one to three days' duration.

Although it is apparent from these reports that the circulating platelets probably can be destroyed by the arsphenamines, it would be peculiar if the other elements of the blood should escape its action. Moore and Keidel⁵ observed several patients with only prodromal symptoms of a reaction, and in each they found a decrease in neutrophil cells, with an eosinophilia of from 5 to 8 per cent, a slight increase in monocytes, and the presence of numerous fragile leukocytes. In another paper they⁶ state that the dermatitis following arsphenamine is usually accompanied by blood changes, consisting chiefly of leukopenia, a decrease in the number of neutrophils, an eosinophilia, a monocytosis, and the appearance of many fragile leukocytes. They do

Blood Counts

Date	Red Blood Cells	Hemo Globin per Cent	White Blood Cells	Platelets	Myelocytes	Meta myelocytes	Neutrophils	Degenerated Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils
4/14*	2,400,000		12,300	Markedly diminished	10.0	22.0	43.5	7.5	16.5	0.0	0.5	0.0
4/15				Markedly diminished	0.0	0.0	97.0	0.0	4.5	2.5	0.5	0.0
4/17	4,300,000	86	16,200	Increased in number 4,000,000	0.0	0.0	80.0	0.0	13.5	2.0	2.5	0.0
4/18	4,600,000											
4/21	4,700,000		11,000									
5/17	4,600,000	86	14,000	Normal	0.0	0.0	70.0	0.0	28.0	1.5	0.5	0.0

* Three hours after injection

a rule did not appear for several days or weeks. They state that the arsphenamines appear to have at least two separate effects, the one a depression of bone marrow function and the other a toxic action on the blood platelets in the peripheral circulation. While the benzene radical may be the causative factor in the production of depressed bone marrow function, they state that it cannot be held responsible for the acute thrombocytopenic cases. In this group there is no evidence of depressed bone marrow function, the destruction of platelets is an acute and a peripheral phenomenon. Their rapid regeneration speaks against any specific toxic action on the megakaryocytes.

This concept of a toxic action on the circulating platelets had previously been stated by other workers. Smith⁷ described a case of acute purpura appearing immediately after an injection of neoarsphenamine. Although no examination was made at the time of the reaction, he suggested that the symptoms might be due to a sudden diminution in the platelets and an almost as prompt recuperation—a so-called platelet crisis.

not state whether these changes in the white cells are due to some aberration of marrow function or to a disturbance of the circulating cells.

Recently we have observed a patient in a reaction following neoarsphenamine in whom there was an immediate purpuric eruption. A blood smear taken a few hours later showed a very definite thrombocytopenia, and in addition there were neutrophilic cells showing changes which we believe are probably due to some direct toxic action in the circulating blood.

REPORT OF CASE

A young white woman, aged 18, first came to the outpatient clinic of the Cincinnati General Hospital in December, 1931, complaining of trouble with her eyes. A diagnosis of syphilitic interstitial keratitis was made probably on the basis of congenital syphilis, and she was referred to the venereal clinic for treatment. She was faithful in returning for treatments and in the course of the next fourteen months she received three courses of bismuth compounds, one course of mercurial oil and two courses of neoarsphenamine. She was given a total of fourteen injections of neoarsphenamine of 0.5 Gm each in February and March 1933; she was allowed a rest period and received no treatment. She returned to the clinic early in

From the Department of Internal Medicine, University of Cincinnati College of Medicine, and the Medical Clinic, Cincinnati General Hospital.
1. Cole H. N., DeWolf, Henry, McCule, J. M., Mikyan, H. G., Williams, C. S., Lau, Chikoh, I. K., Kuch, K. O., and Clark, Felixferro. Toxic Effects Following Use of the Arsphenamines. J. A. M. A. 97: 89 (Sept. 26) 1911.
2. McCarthy, J. J., and Wilson, Robert, Jr. The Blood Dyscrasias Following the Arsphenamine. J. A. M. A. 99: 1527 (Nov. 5) 1932.
3. Smith, C. M. Severe Bleeding and Purpura Following the Administration of Neoarsphenamine. Arch. Dermat. & Syph. 11: 237 (Feb) 1925.

4. Stephens, D. I. Am. J. Syph. 15: 353 (July) 1931.

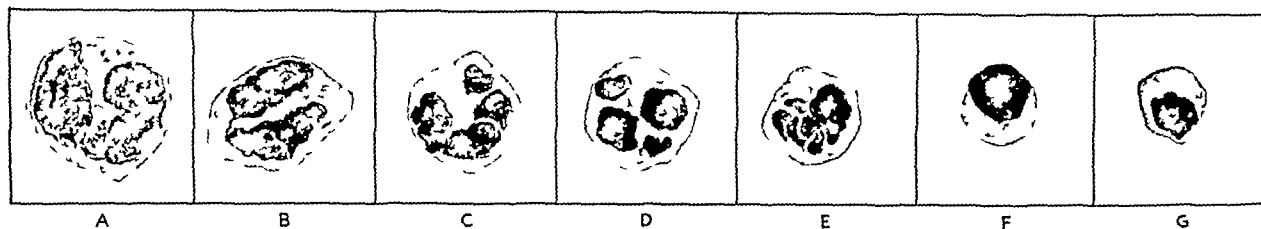
5. Jui Wu Mu. Proc. Soc. Exper. Biol. & Med. 26: 407 (March) 1929.

6. Moore, J. E., and Keidel, Albert. Stomatitis and Aplastic Anemia Due to Neoarsphenamine. Arch. Dermat. & Syph. 4: 169 (Aug.) 1921.

7. Moore, J. E., and Keidel, Albert. Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis. Arch. Int. Med. 27: 716 (June) 1921.

April, and another Wassermann reaction was taken, which was strongly positive. Consequently, on April 7 another course of neoarsphenamine was started. She received 0.5 Gm, and one week later 0.3 Gm. Almost immediately following this injection she became unconscious. She was given an injection of epinephrine and recovered consciousness but was quite delirious. Then there developed a number of purpuric spots over her entire body, which were most marked around her eyes, over the chest and in the conjunctivae. The delirium passed away during the course of the next half hour, and she was sent into the hospital.

This was followed by a rapid regeneration of these cells, either as a compensatory reaction or due to a stimulating effect on the marrow by the neoarsphenamine. Certainly, there could be no toxic depression of the marrow activity in the presence of such evidence of regeneration. Likewise, the reduction of platelets must have been due to some peripheral action. Their prompt reappearance in the blood stream within the next four days preclude the possibility of any specific toxic action on the megakaryocytes.



A cell illustrating the band form that made up the majority of the neutrophils. B, C, D, E, and F neutrophils that had undergone various degrees of destruction, G a small lymphocyte that had undergone some degeneration. The drawings were made by Miss Mary Maciel.

Examination at that time showed the purpuric spots previously mentioned. There was some clouding of the cornea of the left eye. The upper teeth showed the central notch in the incisors characteristic of inherited syphilis. The heart and lungs were normal. The pulse was 90. The blood pressure was 110 systolic, 60 diastolic. The liver edge was palpable two fingerbreadths below the costal margin. The spleen was not felt, though the next day the edge was just palpable. The uterus was enlarged, the fundus extending to the navel, there being a four months pregnancy. The extremities were normal. A blood count and smear were taken just after her admission.

The next day the patient was much improved. No new purpuric spots appeared. Within two days she felt perfectly well and was discharged from the hospital, recovered, one week after admission. She was seen again one month later. At that time she was feeling well except for a recurrence of the interstitial keratitis. No more purpuric manifestations had appeared.

The blood counts are recorded in the accompanying table. A urine examination the day after admission showed the presence of a moderate amount of albumin and numerous red cells. These disappeared after twenty-four hours and thereafter the urine was normal.

The smear taken on the admission of the patient to the hospital showed an interesting picture. The platelets were markedly decreased in number as judged from the slide, though unfortunately no count was made. The neutrophilic leukocytes showed evidence of marked regeneration. There were numerous myelocytes and metamyelocytes and the remaining cells were mostly of the band form. In addition to this there were 75 per cent of degenerated neutrophils. These cells were smaller than normal, some being no larger than red cells. The nuclei were pyknotic, the chromatin being condensed into small deeply staining globules. The granules in the cytoplasm could not be made out in some of the cells and in others only a few coarse granules persisted. There was vacuolization of the cytoplasm in some of these cells.

The majority of the lymphocytes did not undergo the changes suffered by the neutrophils. Two or three were seen, however, which showed evidence of some damage. The nuclei were shrunken and somewhat pyknotic and the cytoplasm seemed to have undergone some condensation. The few platelets that were seen appeared normal. No evidence of damage to the red cells was observed.

Smears taken the next morning did not reveal any of these degenerated cells. The myelocytes and metamyelocytes had practically disappeared from the picture. There was a very high percentage of neutrophils, however, a differential count revealing 92 per cent.

COMMENT

To us, these changes indicated a rapid destruction of the circulating neutrophils by the neoarsphenamine.

SUMMARY AND CONCLUSION

In a case of acute thrombocytopenic purpura following an injection of neoarsphenamine, a smear taken three hours after the injection showed, in addition to the thrombocytopenia, the presence of numerous degenerated neutrophilic cells. There was also evidence of intense marrow stimulation. These conditions quickly disappeared. It is concluded that neoarsphenamine at times has not only a toxic depressant action on the bone marrow but also a destructive action on some of the circulating elements of the blood, and that the neutrophilic cells as well as the platelets are susceptible to its action.

Clinical Notes, Suggestions and New Instruments

COMMUNICATION BETWEEN THE TWO PLEURAL SACS, WITH LUNGS SHOWING TUBERCULOSIS HEALED AFTER THORACOPLASTY

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Demonstrable interpleural communications in man are notably uncommon. The anatomic basis of such natural and spontaneous phenomena is not clear. However, the basis for possible rupture or mechanical break does exist in the anatomic structure of the mediastinum. This has been studied in some detail by Nitsch,¹ who described two "weak" places in the structure of the mediastinum—one posterior to the upper portion of the sternum at the level of the second, third and fourth ribs and the second in the posterior inferior portion of the mediastinum near the level of the eighth rib. When there is a pneumothorax with high pressure or when a pleural exudate is present the mediastinum in the latter region may bulge to the opposite side suggesting hernia. In the presence of pneumothorax with excessive pressure particularly if adhesions are present the possibility of a pleural tear in either of the weak places must be considered.

One instance of interpleural communication in man has been described by each of the following authors: Julien² Dumarest

From the Wm. H. Maybury Sanatorium (Detroit Municipal Tuberculosis Sanatorium).

¹ Nitsch, G. Die schwachen Stellen des Mediastinums. Beitr. z. Klin. d. Tuberk. 13: 120, 1910.

² Julien, W. Les communications interpleurales observées au cours de l'application du pneumothorax artificiel. J. med. franç. 19: 322 (Oct.) 1930.

and Bonafé,³ Dumarest and Marmet⁴ and Johansohn and Proctor.⁵

Recently, an opportunity has been afforded us to study a case of this condition

REPORT OF CASE

A man, aged 35, Polish, had had acute renal disease in 1926, with frequency and albuminuria. At this time he complained of a dry cough, which gradually became productive, ease of fatigue, and loss of weight. A roentgen study of the lungs at this time did not reveal pulmonary tuberculosis. Following this episode, he was symptomatically well until October, 1928, when he noticed swelling of his ankles, greater fatigue, and a more productive cough. A diagnosis of tuberculosis of the left lung was made in December, 1928, and he was admitted to a hospital. In May, 1929, on admission to the Wm H Maybury Sanatorium, roentgen and physical examination revealed pulmonary tuberculosis which involved the whole left lung. The sputum contained tubercle bacilli. The urine showed a great deal of albumin and a few pus cells, a few red cells, and a few hyaline and granular casts. The specific gravity varied from 1.025 to 1.017. The red blood cells numbered 3,910,000. The hemoglobin was 74 per cent. The white blood cells fluctuated between 11,040 and 15,640 with a normal differential count. Analyses of the urine changed but little during his stay here. Guinea-pig inoculation with urinary sediment was negative for tuberculosis. The blood pressure was 110 systolic, 80 diastolic, on admission.

July 16, an attempt was made to induce pneumothorax on the left side. The initial pressure ranged between -4 and -8 , and after the introduction of 400 cc of air the pressure was between 0 and -4 . Immediately after this the patient complained of pain in the right side of the chest. The following day, 240 cc of air was introduced, the final pressure being

left. A total of 500 cc of air was introduced at this time. The pressures before introduction of air were, on the left, between $+2$ and -5 on the right, between $+1$ and -4 . After 500 cc of air was introduced into the left side, the pressures were left, between $+6$ and -5 right, between $+4$ and -6 . Roentgen studies on this date, before and after introduction of air (figs 1 and 2) show the increase in pneumothorax on the right side after introduction of air into the left side.

August 21, a left phrenicectomy was done preliminary to a thoracoplasty, which was performed in three stages in December, 1929, and January, 1930. From this time, the pulmonary tuberculosis was a relatively unimportant part of the picture. The sputum decreased to a very small amount and was negative for tubercle bacilli after April, 1930. Symptoms of chronic nephritis with edema developed and became extreme. Convulsions occurred. The blood pressure at this time was 230 systolic, 150 diastolic. Chemistry studies of the blood added nothing of specific interest. The patient died, March 6, 1932, twenty-seven months after thoracoplasty was performed.

Postmortem Examination

—There was marked anasarca of the body and marked thoracic deformity from operation. Before the body was opened, 800 cc of methylene blue solution was injected into the right pleural space in an effort to find the communication that had existed before thoracoplasty was performed. No channel of communication could be

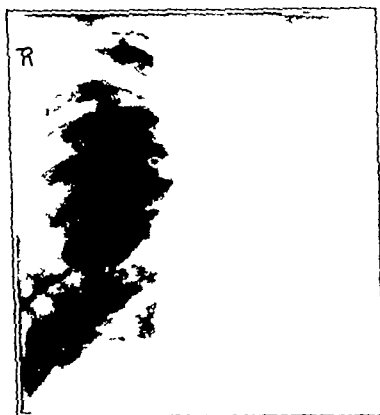


Fig 1—Degree of collapse on the right before left-sided pneumothorax refill Aug 6 1929

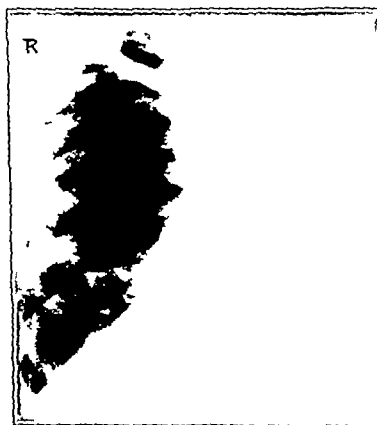


Fig 2—Degree of collapse on the right immediately following introduction of 500 cc of air into the left side Aug 6 1929



Fig 3—Collapsed left lung. The collapse of the whole lung and the marked retraction of the apex are clear. Much of what appears at first view to be apical pulmonary tissue represents mediastinal contents. The arrow indicates the pigmented pleural line which separates lung from mediastinal structure. Although the lower half appears slightly darker than the upper the texture and appearance is similar in all parts of the specimen.

between $+6$ and -6 . On the three following days 250, 400 and 250 cc of air respectively were introduced; the final pressure being between $+7$ and -4 . Fluoroscopic examination revealed no apparent collapse of the left lung, but the right lung was entirely separated from the chest wall by a thin layer of air. This was confirmed by roentgen studies. July 29, 400 cc of air was introduced into the left side which increased the collapse of the right lung by about 50 per cent as seen by the fluoroscope. August 6 a needle was introduced into each pleural space and a series of manometric readings made before and after the introduction of various amounts of air into the left side. It was found after introduction of air that the pressures of the two sides increased together; the changes in pressure on the right lagging slightly behind those on the

found. However, this is not surprising for the left lung was tied firmly to the mediastinal structures and the left pleural space was entirely obliterated by adhesions.

The left lung was contracted to approximately one-fifth its original volume. It was atelectatic, like beefsteak in consistency, and noncrepitant. There were a few minute calcified nodules throughout the base. No signs of active tuberculosis and no cavity was present and there was much gray-white scar tissue (fig 3). The right lung was voluminous and markedly edematous and appeared entirely free from tuberculosis.

The remainder of the autopsy revealed cardiac hypertrophy, vascular sclerosis, large white kidneys and ascites. There was no evidence of tuberculosis.

The account of the histologic examination will be confined to that of the lungs. Fibrosis and scar tissue were taken as the criteria of previous disease. In areas of former disease,

³ Dumarest and Bonafé. Sur quelques accidents rares du pneumothorax artificiel chez le tuberculeux. G 104 (Jan) 1925.
⁴ Dumarest and Marmet. Sur un nouveau cas de communication interpleurale, avec Bull. Soc. de la Station d'Hauteville-Lompnes, October 1929.

⁵ John, H. I. F. and Proctor, A. E. A Case of Communicating Pleural Cavity. Bull. Tuberc. 10: 172 1932.

the scar tissue was dense for the most part, but in some areas it was more or less diffusely scattered, with fibers coursing in alveolar walls and alveolar exudate. The latter, often partially organized, contained numerous large, oval, mononuclear cells and many small round cells. The large bronchi showed considerable lymphoid cell infiltration in their walls. The smaller ones were distorted and well-nigh obliterated by scar tissue. Some had retained their columnar epithelium, others had a

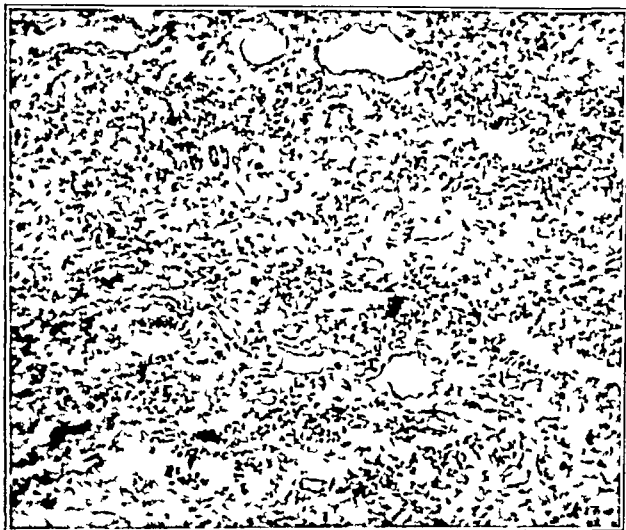


Fig 4—Section of completely collapsed area. Special stains reveal the presence of many elastic tissue fibers indicating that the collapsed area originally contained some degree of disease.

lining quite like flat alveolar epithelium. In some, the mucosa had been shed in part or in toto. There was considerable fat in and just under the greatly thickened pleura in the apical region, particularly on the mediastinal aspect. Figure 4 illustrates the microscopic appearance of an area that contains a moderate amount of scar tissue.



Fig 5—Section of semicollapsed area. The compressed and denuded alveoli, the cells and the cylindric capillaries are described in the text.

For the most part, in the nondiseased areas, the pulmonary tissue was partially collapsed, but in many places it was in a state of virtual atelectasis. Depending on the degree of collapse, alveoli were linear, long and very narrow, or they were more or less completely obliterated by pressure or were filled with large granular monocytes (epithelioid cells), small lymphoid cells and other small round cells of nondescript order. In such areas, the walls were thickened, the epithelium was

intact in part and denuded in part. Throughout, the capillaries in the alveolar walls were large, circular in cross-section, and almost entirely devoid of blood. Throughout the lung, the arteries were greatly thickened and possessed an abnormally large amount of fibrous and elastic tissue. In nondiseased regions, many of the bronchi showed considerable atrophy. Some of these features are shown in figure 5.

The only report available in the literature on the pathologic end-appearance of the healed tuberculous lung, collapsed by thoracoplasty, is by Staemmler,⁶ who presented data concerning a patient who died of a nontuberculous cause nineteen years after thoracoplasty had been performed. In his case, the tissue at former sites of the disease was distorted and densely scarred, that in nondiseased areas was compressed but not atrophic and was apparently unharmed by the prolonged collapse. Staemmler's impression was that simple collapse leaves the elastic fibers unharmed, while inflammatory reaction leads to their destruction. This has been shown to be true in collapse by pneumothorax.⁷

TRAUMATIC PERFORATION OF THE SIGMOID COLON

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All textbooks dealing with the large bowel make mention of the possibility and cite reports of injury by instruments, bougies and other foreign bodies. However, excepting injury by compressed air, the current literature is singularly lacking in such reports. A hasty perusal of the literature for the past ten years failed to present a case similar to ours which we feel warrants the following presentation.

S. W., a white man, aged 45, admitted to Mount Sinai Hospital April 26, 1933 at 1:30 a. m., had been receiving treatment from a naturopath during the past seven or eight weeks for a nasal condition. This treatment consisted of an enema or colonic irrigation. At 8 p. m. of the preceding day (five and one-half hours before admission) while receiving such a treatment he suddenly experienced severe abdominal pain and exhibited the syndrome called shock. The naturopath took him to a physician who administered one-fourth grain (0.016 Gm.) of morphine sulphate by hypodermic injection, without attempting a diagnosis. The patient returned to his home and called another physician, who again symptomatically gave morphine for the pain. After several hours a third physician was called, and he advised hospitalization.

Our examination was made one hour after admission to the hospital, at which time the patient was cyanotic, restless and in extreme pain. The abdomen was distended, rigid and tender, most markedly in the upper right quadrant. No peristalsis could be heard. The temperature was 102 F., respiration rate, 40, pulse, 130. The blood pressure which on admission was 120 systolic, 70 diastolic had dropped to 85/70. The erythrocyte count was 4,350,000, the leukocyte count 3,950. Immediate section was advised with a provisional diagnosis of (1) ruptured colon or (2) ruptured peptic ulcer.

Under spinal administration of 10 mg. of procaine hydrochloride, the abdomen was opened. The peritoneal cavity was distended and completely filled with fluid and feces. Particles of food debris floated on top. Suction apparatus was used to empty the peritoneal cavity. The intestines were inflamed and matted together by exudate. There was a perforation of the sigmoid colon 28 cm. from the anal orifice. The perforation was 1 cm. long with sharply defined margins. To the operator the wall of the intestine appeared of normal thickness without apparent diverticulum, ulceration, growth or inflammation. The wound was closed with a continuous Lambert suture of catgut, reinforced with linen thread. Rubber tubes were placed in the pelvis and the wound was closed by thorough and through silkworm sutures. A transfusion of 325 cc. of whole blood was given. The time of operation was thirty minutes. The patient died at 7 a. m.

6 Staemmler M. Veränderungen des Lungengewebes nach längerer Ausschaltung durch Thorakoplastik. Beitr. z. klin. d. Tuberk. 67: 518 1927.

7 Roubier C. and Doubrow S. Etude histopathologique du mode de l'action du pneumothorax artificiel dans la tuberculose pulmonaire. Rev. de la tuberc. 10: 463 (Aug.) 1929.

Necropsy, performed by Dr D F Meranze, disclosed the following salient features. The peritoneum contained only about 10 cc of blood-tinged fluid. The omentum was hemorrhagic and adherent to underlying coils of intestine, which were markedly congested and adherent to one another. The closed perforation was sealed tight—both air and water proof. There was a small diverticulum 2.5 cm from the perforation.

COMMENTS AND CONCLUSIONS

1 It was impossible to ascertain whether the rupture was caused by a perforation of an instrument or was due to forcible distention by fluid. We are inclined to the former belief because of the incised character of the perforation rather than a ragged tear.

2 The rapidity with which death ensued in this case is cause for consideration. The patient was practically moribund when taken to the operating room seven hours after the accident and died eleven hours after its occurrence. His rapid death, we believe, was the result of the massive absorption of toxins from the concentrated fecal emulsion under pressure. The extremely low leukocyte count likewise bespeaks an overwhelming toxemia.

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SPERMATOGENESIS FOLLOWING THERAPY WITH THE
GONAD STIMULATING EXTRACT FROM THE
URINE OF PREGNANCY

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The rapidly accumulating literature on the pituitary gonad relationship and the effects of the gonad stimulating extract from the human urine of pregnancy deals almost entirely with animal experimentation. The entire subject of endocrinology owes its advancement from the speculative phase of the past century to its present level chiefly to the experimentalists. Clinical studies sufficiently controlled to permit careful analysis are relatively few.

The pituitary gonad relationship shows wide species differences even in members of the closely related rodent group—mice, rats, guinea-pigs and rabbits—on which most of the intensive work has been done. When information is considered from the many other species that have been studied—the frog, pigeon, duck, chicken, pig, cow, horse, dog, cat and monkey—wide variations in the mechanisms involved become apparent. This emphasizes the fallacy of predicting reactions in the human being from results obtained by animal experimentation in the pituitary gonad relationship before such results are actually obtained in man. This also adds value to reports of the results of human therapy.

REPORT OF CASE

B. B., a man, aged 33, seen March 21, 1931, complained chiefly of sterility. The patient was apparently normal in every respect until he acquired mumps at 27, with a complicating bilateral orchitis resulting in bilateral testicular atrophy. For the past three years he had noticed an increasing coarse intention tremor, speech hesitation, sluggishness and occasional dizziness. There had been no loss of libido or potentia nor any castration signs such as prostatic or vesicular atrophy, obesity or vasomotor changes.

The patient was 68 inches (173 cm) tall and weighed 160 pounds (72.6 kg). Physical examination was normal except for bilateral atrophy of the testes, each of which measured about 18 by 11 mm and was very soft.

The basal metabolic rate was plus 9 per cent. Chemical and microscopic examinations of the blood and urine showed no abnormalities. The blood gave a negative Wassermann reaction. There was complete aspermia on three examinations of condom specimens over a period of one month.

A preparation of anterior pituitary-like principle from pregnancy urine, 2 cc (17 rat units per kilogram of body weight), was administered in the gluteal muscle twice a week. Within two weeks there was a definite increase in the size and firmness

of both testes, and at three weeks occasional nonmotile spermatozoa were found. At six weeks there were numerous nonmotile spermatozoa, and at nine weeks large numbers of actively motile spermatozoa were present. The size of each of the testes steadily increased to 20 by 28 mm, and the consistency returned to normal. There was marked subjective improvement, including an increase in capacity for both mental and physical work. The tremor, speech difficulty, sluggishness and dizziness had disappeared.

After twelve weeks, treatment was discontinued. Four weeks later, only a few nonmotile spermatozoa were present, and three weeks later the testes were definitely softer, with only occasional nonmotile spermatozoa demonstrable. Treatment was resumed, and after three weeks a few motile spermatozoa made their appearance. At the fifth week they were present in large numbers and were very active. Numerous spermatozoa and testicular firmness were maintained for a year on a dosage of 2 cc of the preparation of anterior pituitary-like principle from pregnancy urine once a week. A lapse of treatment for one month resulted in a decrease of spermatozoa and testicular softening. On the resumption of treatment, spermatozoa increased, and the testes became firm. For eight months this condition has been maintained on a dosage of 2 cc every two weeks.

COMMENT

The gonad stimulating substance from the urine of pregnancy is not as yet positively identified with the sex hormone fraction of the anterior pituitary, and its source is not definitely known. Its physiologic effects are in many ways similar to those of the sex fraction of the anterior pituitary, but there are distinct differences. There are a few positive reports in the literature of spermatogenesis following its administration. Schockaert¹ reports spermatogenesis in the duck. Balawenetz² reports the hastening of spermatogenesis in immature animals. Kraus³ reports hyperplasia of the interstitial cells of the testes and spermatogenesis following administration of Aschheim-Zondek's hormone to male animals. Schapiro⁴ reports spermatogenesis in nine of twenty-six young human males. There are no reports of induced spermatogenesis in the adult human male.

Of the negative reports an outstanding one is that of Engle⁵ who reports an increase in the size of the testes without spermatogenesis in immature monkeys and rats. In a summary of the literature he states that in the male mammal, it is generally agreed that none of these gonad stimulating factors are directly concerned with gametogenesis. The results in the case here presented indicate that man may be an exception to this general statement. The difference in results obtained may be due in part to differences in material used, in dosage and in duration of observation.

It should also be noted that in this case with marked bilateral testicular atrophy and complete aspermia there was retention of libido and potentia, and none of the signs of castration appeared. This would seem to indicate, as is commonly assumed, that the preservation of secondary sex characters, as well as the maintenance of the prostate and vesicles, are directly concerned with the interstitial cell of the testes and not with the tubule.

While generalizations from a single case must always be made with caution, it is possible to infer here that the pituitary did not hypertrophy as in castrates with production of an excess of sex hormone, as this patient responded to therapy with a pituitary-like substance.

SUMMARY

In a case of complete aspermia with bilateral testicular atrophy following orchitis as a complication of mumps, spermatogenesis repeatedly followed the administration of the gonad stimulating extract from the human urine of pregnancy, and aspermia returned on the withdrawal of treatment. This seems to permit the interpretation that in this case the gonad stimulating extract from pregnancy urine stimulated spermatogenesis in a human being.

1304 Kresge Building

The material used was a preparation of anterior pituitary-like principle from pregnancy urine supplied by Parke Davis & Co. During the first six months it contained 50 rat units per cubic centimeter; since that time it has contained 100 rat units per cubic centimeter.

1 Schockaert J. A. Anat. Rec. 30: 381 (Oct. 25) 1931.
2 Balawenetz S. Virchows Arch. f. path. Anat. 274: 585 1930.
3 Kraus E. J. Klin. Wchnschr. 9: 1-93 (Aug. 9) 1930.
4 Schapiro L. Deutsche med. Wchnschr. 56: 1605 (Sept. 19) 1930.
5 Zischner J. Klin. Med. 114: 610 1930.
6 Engle E. T. Endocrinology 16: 506 (Sept. Oct.) 1932.

DRAINAGE OF A SYRINGOMYELIC CAVITY TWICE
IN THE SAME PATIENT THREE YEARS
INTERVENING

CHARLES H. FRAZIER, M.D., Sc.D., PHILADELPHIA

In these columns almost three years ago, I¹ recorded my experience and the immediate results in the treatment of a syringomyelic cavity by drainage. The operation was performed, April 14, 1930. The cord was exposed by removal of the spinous processes and laminae of the seventh cervical and the first thoracic vertebra. The cavity was drained by an incision just to the right of the median line and, to prevent the lips of the incision uniting, a small strip of gutta percha was interposed. While the patient was seriously crippled, the principal indication for the operation was urinary incontinence. The subsequent history of this case has so many points of interest that I venture to submit it for publication.

In the first place, there has been no recurrence of the incontinence for the relief of which the operation was performed. This, of course, was a source of great satisfaction to the patient. But in the middle of January, 1933, the patient began to have attacks of respiratory embarrassment, both distressing and alarming. In addition, she developed a right-sided ptosis and could speak only in a whisper. Although her condition seemed desperate, we ventured to have her transported by ambulance some 90 miles for readmission to the University Hospital.

It was quite evident from the symptoms as described that the process had extended somewhat cephalad since the first operation. But to assure myself that the syringomyelic cavity had refilled, before consideration of a second operation I decided to explore with a lumbar puncture needle. The needle was introduced at the level of the previous laminectomy and soon penetrated the dural sac. Cerebrospinal fluid escaped freely. The stylet was reintroduced, the needle was advanced and again clear fluid escaped but at a much slower rate, and the rate of flow was not affected by jugular compression. Manifestly, the needle had penetrated the syringomyelic cavity which had evidently refilled, since about 9 cc of fluid escaped, presumably from the redistended cavity.

If, as we presumed, the drainage opening had closed and the cavity had refilled, the indications for operation were as clear and justifiable as they were in the first instance. Accordingly, February 2, the spinal sac was reopened through the original incision. On inspection there was no trace of the incision made in the cord three years before. On the surface the cord appeared quite normal except at one point where there was an adhesion between the arachnoid and the cord. I selected this point for my incision. The cord was steadied with a small hook and an incision 2 cm long made into the syringomyelic cavity. The second incision must have been precisely at the site of the incision of three years before, for lying in the cavity at that level I saw the tiny strip of gutta percha, which had been introduced at the first operation in the hope of preventing the lips of the chordotomy wound from closing. Evidently, the strip of gutta percha had fallen into the cavity and the wound had closed over it. To prevent the gutta percha strip from being dislodged again, I secured it in place with a silver clip, clamped to the ridge of the chordotomy wound.

During the five months since the second chordotomy there has been a striking improvement. The alarming symptoms have disappeared, the patient's voice has returned, and she can partially open her right eye. She has returned to her former regimen and is carrying on where she left off before the setback in December, 1932.

No attempt has been made to describe in detail the syringomyelic picture. This communication purports only to bring to the reader's attention the experience of a patient with syringomyelia (1) operated on twice, (2) with an interval of three years between the first and second operation and (3) with striking improvement after each operation, and to call the attention of the medical public to the propriety of resorting to a second operation should there be signs of recurrence or progression of the lesion.

3400 Spruce Street

¹ Frazier, C. H. Shall Syringomyelia Be Added to the Lesions Appropriate for Surgical Intervention? *J. A. M. A.* 95: 1911 (Dec. 20) 1930.

Council on Pharmacy and Chemistry

CLAVIPURIN NOT ACCEPTABLE
FOR N. N. R.

Report of the Council

ON CONSIDERATION OF THE COUNCIL'S ACTION ON CLAVIPURIN, AS SET FORTH IN THE FOLLOWING REPORT AND THE STATEMENT BY THE MANUFACTURER GEHE & COMPANY, THAT THIS FIRM COULD NOT COOPERATE IN MAKING THE PREPARATION ACCEPTABLE GAYE & INGRAM, THE AMERICAN DISTRIBUTOR HAS INFORMED THE COUNCIL THAT IT HAS NO INTENTION OF MARKETING CLAVIPURIN IN THIS COUNTRY. AS A CRITICAL ADDITION TO THE LITERATURE ON ERGOT PRODUCTS AND FOR THE INFORMATION OF PHYSICIANS THE COUNCIL AUTHORIZED PUBLICATION OF THIS REPORT.

PAUL NICHOLAS LEECH, Secretary

Clavipurin is a preparation of the alkaloids of ergot (*claviceps purpurea*) manufactured by Gehe and Co. A. G. of Dresden and marketed in this country by Gaye and Ingram. It is stated to contain (in the form of tablets, or as solution in vials and ampules) "the entire complex of the uterus-active alkaloids in exact dosage, in purest and isolated form." No statements appear on the labels of any of the dosage forms as to their alkaloid content or pharmacologic activity in terms of some standard preparation.

The active principles of Clavipurin are claimed to represent ergotamine and ergotoline. According to the claimed method of preparation, the composition of the finished product would vary with the proportions of the alkaloids in the crude drug. The relative proportion of ergotamine and ergotoline present would not be of much importance, as these have practically equal potency, but since ergotamine and ergotoline also occur in the crude drug and are of considerably less activity than the other two alkaloids, the relative amounts of the latter would considerably modify the activity of the preparation. Hence pharmacologic assay would be essential even assuming that Clavipurin contains only the alkaloids and no contaminating substances, which seems unlikely.

At the request of the A. M. A. Chemical Laboratory the firm supplied specimens of Clavipurin powder in addition to the foregoing dosage forms, for assay. In a letter, the firm stated that 0.6 Gm. of Clavipurin powder is sufficient to make 3 Kg. of solution or 1000 tablets. This would represent 0.2 mg. per gram (or approximately per cubic centimeter) of solution, or 0.6 mg. per tablet. In another communication, the firm claimed, further, "Each tablet is guaranteed to contain 0.5 mg. of pure alkaloids." Presumably the powder is intended to represent the pure alkaloids although it is not so stated.

In the "literature" submitted by the firm, the following statements appear as to the alkaloidal content of Clavipurin solution:

0.18 mg. per cc.	(Schubel and Straub)
0.6 mg. per cc.	(Mahn and Reinert)
1.0 mg. per cc.	(Roseno)
5.0 mg. per cc.	(A. Braun)

The only one that approximates the claimed content is that of Schubel and Straub. The Council's referee found no satisfactory explanation of this divergence.

Specimens of Clavipurin powder, tablets and solution were assayed for the A. M. A. Chemical Laboratory by two independent investigators working in different laboratories. One of these workers (designated *a*) assayed the preparations pharmacologically both by blood pressure and by the U. S. P. cock's comb methods against fresh preparations of Fluidextract of Ergot U. S. P. as standard. The other (designated *b*) employed the U. S. P. method, the Broom and Clark method and Smith's Chemical method against ergotamine tartrate crystals as standard. The results obtained are as follows:

1. (a) 75 mg. of Clavipurin powder is equivalent to about 1 cc. of the U. S. P. Fluidextract which represents about 0.05 mg. of ergotamine tartrate. The powder then contains the equivalent of about 0.67 per cent of this alkaloid. (b) 1 mg. of Clavipurin powder is equivalent to from 0.15 to 0.2 mg. of ergotamine tartrate, representing from 15 to 20 per cent. Determinations by *a* and *b* were made on different samples of the powder. The Council's referee has no information as to

whether or not these came from the same lot. This indicates a difference in activity of about 3,000 per cent, if there is doubt as to the validity of the observations, this would seem to apply only to the result obtained by *a*, since the determination of *b* was checked by three different methods. However, in the former, 50 mg had no effect on the cock's comb, which seems to indicate that the first determination was correct and that the specimen used was practically inactive.

2 (a) 1 cc of the solution represents from 0.5 to 0.67 cc of the U S P Fluidextract or is equivalent to approximately 0.25 to 0.34 mg of ergotamine tartrate per cubic centimeter, (b) Clavipurin solution is equivalent to about 0.25 to 0.3 mg ergotamine tartrate per cubic centimeter.

Clavipurin solution therefore appears to represent a little more than half the potency of the U S P Fluidextract Ergot, both the foregoing values exceed that claimed by the firm. Either more of the powder is used for making the solution than is claimed, the powder has deteriorated whereas the solution has not (this appears unlikely), or the solution was not made from powder having the assayed potency.

3 (a) One tablet is equivalent to from 0.4 to 0.75 cc of U S P Fluidextract, representing about 0.2 to 0.38 mg of ergotamine tartrate, (b) one tablet contains approximately 0.315 mg of ergotamine tartrate. These values are about one-half those claimed for the tablets (from 0.5 to 0.6 mg).

In no case therefore, have these independent assays confirmed the claims of the firm, the values found vary from 0.67 to 150 per cent of the claimed potencies.

Clavipurin appears to be practically free of histamine, acetylcholine and tyramine.

The firm, being apprised of these results, replied that Clavipurin is subject to "periodical control examinations by the Pharmacological Institute of Kiel University (Professor in ordinary Dr. Kulz)", and that a recent assay against Gynergen as standard showed two specimens to be equal in activity to and one to have 120 per cent of the potency of Gynergen. Since the reports to the A M A Chemical Laboratory show the Clavipurin solution to exceed the declared potency, the latter result seems quite plausible. However, the firm does not claim that the activity of each batch of Clavipurin is controlled by pharmacologic assay, and the determinations quoted certainly indicate a lack of adequate standardization.

Therapeutic Usefulness.—The chief claims for Clavipurin are based on the clinical use which apparently dates from 1923. Most of the reports available to the Council's referee are enthusiastic, and several attempt to show that toxic results with Gynergen are comparatively common while these do not occur with Clavipurin. Since Clavipurin is not a pure alkaloid and is apparently quite variable in activity, the claimed lesser toxicity is very likely due to a lower potency. It is difficult to see how any other explanation can be adduced for this, since Gehe and Company claim precisely the same actions for Clavipurin as have been demonstrated for Gynergen. No evidence has been submitted that Clavipurin contains any substance that would tend to diminish the noxious effects, and the two active alkaloids, ergotamine and ergotoline, have precisely the same toxicity according to competent and adequately confirmed observations in the literature. Gynergen solution-N N R contains approximately four times as much and Gynergen ampules-N N R about twice as much ergotamine tartrate as the ergotamine tartrate equivalent of the Clavipurin solution and ampules assayed for the A M A Chemical Laboratory.

The therapeutic results with Clavipurin appear to approximate those obtained with the standard fluidextract of ergot and with the accepted injectable preparations; however, so long as a product has a fair oxytocic potency, even if this is not uniform, it may be found clinically effective in a considerable number of cases, particularly (as is common practice) when it is used prophylactically. But in the literature submitted by the firm, the recommendations by several authors that the dosage be repeated indicates that Clavipurin is no more reliable in those cases with real uterine inertia than the assay data indicate.

Gehe and Ingram were informed that if acceptance of Clavipurin was desired, the firm would be required within a reasonable time to make the name and advertising acceptable to the Council,

to present complete data as required by the Council's rules, to standardize the product so as to make it acceptable to the A M A Chemical Laboratory, and to word the labels so as clearly to indicate the potency in terms of a standard preparation. This was transmitted to Gehe and Company; this firm replied in part that it would not be able to comply entirely with the Council's requirements.

Clavipurin was therefore declared unacceptable for New and Nonofficial Remedies because the composition is not fully revealed, because it is not adequately standardized as to potency, and because it is marketed under a nondescriptive proprietary name with unwarranted therapeutic claims.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
RAYMOND HERTWIG Secretary

NOT ACCEPTABLE

ROMAN MEAL

The Roman Meal Company at Tacoma, Wash., submitted to the Committee on Foods a product called 'Roman Meal,' prepared from coarsely ground whole wheat and rye with smaller proportions of wheat bran, and pulverized, partially defatted flax seed. The mixture is heated to 70 C to destroy any insect infestation, sifted, and automatically filled into cartons.

Analysis (submitted by manufacturer) —

	per cent		per cent
Moisture	8.3		
Ash	3.3		
Fat (ether extraction method)	3.2		
Protein (N X 6.25)	15.5		
Crude fiber	6.2		
Carbohydrates other than crude fiber (by difference)	63.5		
Phosphorus as P ₂ O ₅	1.690	(as P)	0.737
Sulphur as SO ₃	0.041	(as S)	0.016
Chlorine (Cl)	0.021		
Calcium as CaO	0.112	(as Ca)	0.080
Magnesium as MgO	0.545	(as Mg)	0.329
Iron as Fe ₂ O ₃	0.0086	(as Fe)	0.0060
Aluminum as Al ₂ O ₃	0.0036	(as Al)	0.0019
Silicon as SiO ₂	0.020	(as Si)	0.009
Sodium as Na ₂ O	0.048	(as Na)	0.036
Potassium as K ₂ O	0.758	(as K)	0.629

Discussion of Label and Advertising.—The label and advertising make the following claims:

Roman Meal contains all the life giving properties of whole wheat and rye. It is now sterilized by subjection to a very high degree of heat. It is a perfectly balanced human food. It is a great aid to digestion and a positive relief to constipation. For over a century there has been a most urgent need for a simple and perfectly balanced human food that would prevent the development of abnormal or disease conditions in the digestive tract. For a balanced food that shall offset the evils and deficiencies of the devalitized and over refined present day diet. By a balanced food we mean that it contains in proper proportions all of the elements which the body requires in maintaining a high degree of health and vitality. These four ingredients (of Roman Meal) are combined in such proportions as to make a perfectly balanced human ration for family use. Bear in mind that no one grain can be balanced. It requires combination. ROMAN MEAL is such a combination developed scientifically by a physician. It contains all the vital health giving mineral salts and vitamins. When a child is fed ROMAN MEAL, it also receives proper amounts of soda, potash, lime, phosphorus, iron and other mineral matters to form bones, teeth, nerve and brain, give tonicity to muscles and hydrochloric acid for digestion and coloring matter to the blood. Eat Roman Meal for health. It aids the digestion of other foods.

Roman Meal is not a 'perfectly balanced food,' since it does not contain all the required nutritional elements in adequate proportions. It is not an aid to digestion; nor is it a 'positive relief to constipation.' The product contains considerable indigestible material which may aid in overcoming constipation due to insufficient bulk in the diet, it will not, however, correct pathologic constipation and may aggravate such a condition. It will not 'prevent the development of abnormal or disease conditions in the digestive tract.' The food lacks a number of nutritional elements required for 'maintaining a high degree of health and vitality' and others are insufficient in quantity. The cereals and flax ingredients are not combined in any proportions known to have nutritional significance. "No one grain can be balanced nor can any combination of grains all the

grains have approximately the same nutritional limitations. Roman Meal was not developed "scientifically" by a physician. It is lacking in some of the vitamins and is only a fair source of others. The "mineral salts" as a whole are quite insufficient. Neither the minerals nor the vitamins are "health giving." "A child fed Roman Meal" does not receive "proper amounts" of the "minerals" to "form bones, teeth, nerve, brain, etc." The food is no more an aid "for health" than are other common foods.

The advertising goes on to claim

ROMAN MEAL cools the blood because of its alkaline Flaxose. Ordinary cereals heat the blood in summer because they are acid. Correct any over acid condition by the use of the naturally alkaline food Roman Meal. Lost Appetite will not trouble you during the hot spell if you counteract the excess acid of ordinary foods with the corrective alkaline properties of Roman Meal. In hot weather the over acid contents of meats, white flour and refined cereals produces lazy, drowsy, hate-yourself feelings. Roman Meal and other alkaline foods insure you more ambition and energy that you have ever known in summer. Roman Meal because of its Flaxose is the only alkaline cereal sold. It clears the skin.

Roman Meal does not 'cool the blood because of its alkaline flaxose' nor do "ordinary cereals heat the blood in summer because they are acid." The temperature of the blood of a healthy person is practically the same throughout all seasons. Roman Meal is not an 'alkaline food' as claimed, estimations from the mineral content indicate that it is slightly acid producing (estimated potential acidity [Sherman, H. C. *Chemistry of Food and Nutrition*, ed. 4, chapter XII, pp. 275-276] 0.4 cc normal acid). Therefore, Roman Meal will not correct any "over-acid" condition. There is no authoritative information indicating that appetite is lost during the hot season because of "the excess of acid of ordinary foods" nor that the acid producing foods such as meats and cereals produce "lazy, drowsy, hate-yourself feelings." Even if this were true, Roman Meal, because of the practically neutral value of its minerals, would be incapable of counteracting any acid effects of other foods. "Roman Meal and other alkaline foods" are not known to insure "more ambition and energy" in summer. The alkali requirements of the body are met by vegetables, fruit and milk. The aspersions directed at "beef, white flour and refined cereals" because of their acid metabolic residues are unwarranted, these are wholesome foods and have a proper place in the diet as a whole. Roman Meal is not "the only alkaline cereal sold." Another cereal on the market is far more alkaline. In fact it is incorrect to designate Roman Meal as an "alkaline cereal." Roman Meal will not specifically "clear the skin" any more than will many other common foods.

It is further alleged that

For generations bran and flaxseed as bran mash have been fed to stock as a conditioner and to increase the quantity and quality of milk. ROMAN MEAL because of its bran and flaxose content has a similar effect upon the human. It is a most efficient galactagogue. Flaxose is also added to compensate for the nutrition lost to any food by the addition of bran. Flaxose is three times as rich in protein as wheat, rye or oats. Thus by adding flaxose and the brown flour from the aleurone layer of the grain berry to the granulated whole wheat and rye we maintain in ROMAN MEAL proper balance between tissue building elements, saline matters and waste. Bran is added in ROMAN MEAL for bulk or waste only. It is pure cellulose therefore non digestible except in a limited way by action of the bacterial flora of the intestine and the saline constituents cannot be appropriated by the human.

But bran does cause catarrh of the colon used alone or used with refined grain products. To prevent this with ROMAN MEAL DEMULCENT FLAXOSE has been added which by its bland soothing action neutralizes the mechanical irritation caused by bran. Flax is included for its oil which soothes and lubricates as well as for the fibre bulk which it supplies. Flaxose is slightly hygroscopic and tends to prevent absorption of moisture from the fecal mass to dissolve fecal concretions. It also lubricates the intestinal wall. By both actions it lessens resistance to the intestinal flow and the increased propulsive force back of the fecal mass caused by bran. ROMAN MEAL is a most positive aid to the physician in the treatment of constipation and its attendant ills yet there will be no irritation to the sensitive alimentary mucosa as with the use of bran. Because it contains the dark flour from the aleurone layer of the grains ROMAN MEAL is rich in soluble salines. It thus differs materially from white flour, refined cereals and bran or any combination of these since flour and refined cereals contain but a trace or (of) salines and bran none (as far as the human is concerned). To add bran to any refined product does not restore balance. It adds bulk only, the important salines and vitamins are still absent—and these are even more important than bulk.

Roman Meal is not a galactagogue. The flax content does not "compensate for the nutrition lost by the addition of bran." The claim of 'proper balance between tissue building elements,

saline matters and waste" in Roman Meal is without meaning. Bran is not "pure cellulose", it contains available nourishment. "Bran used alone" or "used with refined grain products" does not necessarily cause "catarrh of the colon." The addition of flax to Roman Meal cannot be expected to "neutralize the mechanical irritation caused by the bran." The claim "flax was included for its oil" does not accord with the information provided by the manufacturer that the oil is removed from the flax before it is incorporated in Roman Meal. Since the oil is removed, the flax will not "lubricate the intestinal wall" as claimed. The explanation of how Roman Meal acts on the intestine is largely fanciful. Roman Meal is not "the most positive aid to the physician in the treatment of constipation and its attendant ills" nor is there assurance that "there will be no irritation to the sensitive alimentary mucosa as with the use of bran." The statements regarding the aleurone layer ingredient and its contribution of "soluble salines" are largely without meaning. The claim that bran provides no available "salines available to humans is incorrect. Contrary to claims bran also contributes vitamin B.

It is further stated that the ingredients of Roman Meal are

cut into little granules that the food may be porous to the digestive fluids. Crushed or rolled foods tend to become amorphous and are not porous to the digestive fluids and their enzymes. Thus ROMAN MEAL PROMOTES digestion. It is itself easily digested—it aids the digestion of other foods. It is rich in essential vitamins. While not so rich in fat soluble A vitamin ROMAN MEAL with the addition of cream, whole milk or cow butter is richer than any other cereal in this vital element and abundantly sufficient for every possible need. Cure Constipation and you cure all. Rheumatism, appendicitis, indigestion, stomach troubles, chronic headache, unsightly pimples and blotches, bad breath and scores of other ailments can be traced directly to constipation.

ROMAN MEAL is indeed a simple and natural remedy for some of the most widespread and insidious ills to which mankind is subject. At the time when the body is in its formative stages ROMAN MEAL supplies the potash, lime, phosphorus, iron and other elements needed in laying the foundation of health that will carry the child through life. This is the period when the teeth are being formed. Deficiencies in diet result in weak tooth structure and it is a condition that cannot be corrected after the second teeth are formed. ROMAN MEAL if used regularly and consistently will give your child the start in life you owe him. Physicians prescribe ROMAN MEAL for children for brain and muscle workers for athletes for nursing and expectant mothers for the aged undernourished and anemic—for the sick and those who wish to maintain present good health.

Roman Meal is not porous to the digestive fluids" because it is cut into little granules" nor is it true by comparison that 'crushed or rolled foods' are not porous to the digestive fluids and their enzymes." The explanation of how Roman Meal 'promotes digestion' has apparent plausibility only. Roman Meal does not aid the digestion of other foods," a claim implying digestive action as possessed by digestive enzymes. It is not rich in essential vitamins." The claim that Roman Meal mixed with cream or butter "is richer than any other cereal in vitamin A" is worded to trick the reader to understand Roman Meal is rich in vitamin A, whereas it is contributed mostly by the cream or butter. Not all ills are cured when constipation is cured. The various ills related cannot be attributed in all cases to constipation. Roman Meal is not a remedy in any sense for most widespread and insidious ills." It does not supply the various chemical elements stated in the quantity needed to lay the foundation of health that will carry the child through life. Roman Meal is not specifically helpful for nourishment of teeth to the contrary foods such as Roman Meal lend to poor tooth development. Physicians do not specially prescribe Roman Meal as stated.

It is claimed that

ROMAN MEAL was invented by a physician. The cereal manufacturer's idea has been to refine away all the coarse and darker parts of grains. This has removed the real food value, those parts which build muscle, bone, brain, nerve, keep the blood from becoming acid. This invites disease. It is common knowledge that rheumatism is caused by acid blood, yet this is only one of many diseases caused by absence from the blood of the alkaline salts obtained largely from the dark parts of grains. Roman Meal retains all the alkaline salts. This makes for healthy blood. Wheat is only about three quarters as nourishing as rye and only about one third as nourishing as flax. Roman Meal is largely made up of rye and flax. It is therefore the most nourishing cereal ever sold. It is the most perfect food ever devised. It is non-starchy and does not ferment. It makes bone, muscle and nerve better than meat. Ordinary cakes and pastry are most injurious to the growing child but ginger bread, cookies, muffins, gems and puddings as well as mush made from ROMAN MEAL make ideal lunches between meals for the child.

Contrary to the claims, refined cereals have definite food values, "coarse and darker parts of the grains do not especially 'build muscle, bone, brain, nerve,' nor do they 'keep the blood from becoming acid' Whole grain cereals have broader nutritional values than refined cereals but refined cereals have a proper place in a satisfactory diet Rheumatism is not 'caused by acid blood' nor are 'many diseases' caused by absence from the blood of the 'alkaline salts obtained largely from the darker parts of the grains' Roman Meal does not necessarily 'make for healthy blood' It has never been demonstrated that 'wheat is only about three-quarters as nourishing as rye, and only about one-third as nourishing as flax' Roman Meal is not 'the most nourishing cereal ever sold' In fact, some other cereals provide much broader nutritional values Roman Meal is far from being the 'most perfect food ever devised' It is not 'non-starchy,' and it may 'ferment' It does not 'make bone better than meat' and Roman Meal lunches are not 'ideal for children'

The advertising is an elaborate attempt to transform Roman Meal into a medicinal food with fictitious health properties, it has all the appearances of studied deception to exploit the gullible and the uninformed in dietetics nutrition and physiology It grossly misrepresents the product is replete with misinformation, and promotes self diagnosis and self treatment by the sick with possible disastrous results It is a corruption of the purpose of advertising to the trade and to the public Insidiously false advertising of this character tends to degrade food advertising to subtle trickery

Roman Meal because of its grossly deceptive advertising, will not be listed among the Committee's accepted foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



RAYMOND HERTWIG Secretary

MCCORMICK'S BEE BRAND WHITE PEPPER

Manufacturer—McCormick and Company, Inc., Baltimore

Description—Ground white pepper (berry of *Piper nigrum* L. with the epicarp removed)

Manufacture—White pepper is prepared from black pepper berries by removal of the outer black epicarp The pepper berries almost completely mature on the vine After picking they are allowed to stand for several days and are bruised and washed to remove stems and to separate the pulpy epicarp The inner portion of the berry is dried on mats exported to the company's packing plant cleaned ground and packed in tins

Analysis (submitted by manufacturer)—

	per cent
Moisture	11.9
Total ash	1.4
Acid insoluble ash	0.1
Volatile ether extract	1.0
Nonvolatile ether extract	7.3
Total nitrogen	2.0
Piperin nitrogen	0.4
Piperin	6.2
Protein nitrogen	1.6
Protein (N x 6.25)	10.2
Starch (diastase method)	55.2
Crude fiber	3.9
Carbohydrates other than crude fiber (by difference)	64.3

Claims of Manufacturer—Conforms with the respective United States Department of Agriculture definition and standard

AMERICAN BRAND EVAPORATED MILK UNSWEETENED STERILIZED

Packer—Oatman Condensed Milk Company, Dundee, Ill.

Description—Canned unsweetened sterilized evaporated milk the same as Oatman's Brand Evaporated Milk (THE JOURNAL April 16, 1932 p 1376)

KRASDALE BRAND CALIFORNIA WHITE MEAT TUNA

(PACKED IN HIGH GRADE SALAD OIL)

Packer—Hovden Food Products Corporation, Monterey, Calif
Distributor—A Krasne New York

Description—Cooked light meat of Yellowfin Tuna with added salt, refined cottonseed oil and sour pickle the same as Portola Brand California Tuna (THE JOURNAL, May 28, 1932, p 1885)

EVANS' E-Z-BAKE FLOUR (BLEACHED)

Manufacturer—Acme-Evans Company, Indianapolis

Description—An 'all purpose' short-patent flour milled from hard and soft wheats, bleached

Manufacture—Selected soft and hard wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210 Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per 196 pounds)

Claims of Manufacturer—Intended for all baking purposes

CLAPP'S ORIGINAL PUREE OF BEETS

(ADDED SALT)

Manufacturer—Harold H Clapp Inc., Rochester, N Y

Description—Strained cooked beets The method of preparation is efficient for retention in high degree of the natural vitamins and minerals A small amount of salt is added

Manufacture—Purchased canned beets are strained in an atmosphere of steam The subsequent treatment is essentially that described for Clapp's Original Baby Soup (THE JOURNAL, Aug 19, 1933, p 605)

The purchased canned beets are prepared, canned and processed as described for the purchased canned carrots (THE JOURNAL, June 24 1933, p 2011)

Analysis (submitted by manufacturer)—

	per cent
Moisture	90.5
Total solids	9.5
Ash	0.4
Salt (NaCl)	0.3
Fat (ether extract)	0.2
Protein (N x 6.25)	0.9
Crude fiber	2.4
Carbohydrates other than crude fiber (by difference)	5.6

Calories—0.3 per gram 9 per ounce

Vitamins and Claims of Manufacturer—See Clapp's Original Baby Soup (THE JOURNAL, June 24 1933, p 2011)

CRESCA HYGEIA FIGS

(NATURAL SUN DRIED UNSULPHURED)

Importer and Distributor—Cresca Company, Inc., New York

Description—Unsulphured cleaned dried Cresca Choicest Smyrna Locum Figs

Manufacture—The figs are the same as those used for Cresca Choicest Smyrna Locum Figs Not sulphured (THE JOURNAL Nov 19, 1932 p 1780) Cleaned, dried figs are packed in waxed paper in cartons

SNOW DROP FLOUR (BLEACHED)

SILVER SPRAY BEST PASTRY FLOUR (BLEACHED)

GLOBE PASTRY FLOUR (BLEACHED)

Manufacturer—Federal Mill Inc., Lockport N Y

Description—Bagged soft winter wheat "straight" flour, bleached

Manufacture—Selected soft white winter wheat is cleaned scoured tempered and milled by essentially the same procedures as described in THE JOURNAL June 18 1932 page 2210 The flour streams are blended and bleached with nitrogen trichloride (one fourteenth ounce per 196 pounds) and with nitrogen oxide

Claims of Manufacturer—For baking cakes, biscuits and pastry

PHYSICIANS SPECIALIZING IN PATHOLOGY AND CLINICAL PATHOLOGY

PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The present list of physicians specializing in pathology and clinical pathology is the outgrowth of the survey of clinical laboratories that was begun in 1924. At that time the House of Delegates instructed the Council to ascertain how best to regulate the clinical laboratory situation. A committee of pathologists, including members of the American Society of Clinical Pathologists and the American Association of Pathologists and Bacteriologists, was appointed to assist the Council in securing information in regard to commercial clinical laboratories.

The original request for some regulation regarding clinical laboratories came from the clinical pathologists in 1923, the two societies mentioned having worked independently for some time toward a solution of the problem. Some means of eliminating lay specialists in this field was sought. It was held improper for any person not qualified educationally and legally to assume the responsibility of making a diagnosis or prognosis, or of acting as a consultant with regard to disease in the human body. Where the law does not restrict diagnosis and the interpretation of laboratory observations to qualified medical practitioners, all other means available should be used to protect the patient against the incompetence of the lay specialist and the nonmedical clinical laboratory.

For seven years the Council, with the assistance of the committee of pathologists, approved clinical laboratories according to a minimum standard, the principal emphasis being on the qualifications of the pathologist. The list of approved laboratories was published periodically, and physicians were urged through the publications of the Council to patronize only such clinical laboratories as were under the direction of physician pathologists. In 1931 the listing of clinical laboratories was changed and has since been a list of pathologists and clinical pathologists, on the basis of their education, training and experience. It was also expanded to include teachers and those employed in hospital, research or governmental laboratories. The present list of physicians specializing in pathology and clinical pathology contains 704 names. Applications for recognition are being considered regularly. Thus it may be said that the clinical laboratories now recognized by the Council are those which are under the direction of the pathologists listed.

The progress made in this endeavor to distinguish the medical from the nonmedical clinical laboratories has been in direct proportion to the cooperation extended by the profession. Many physicians in the past, not appreciating fully the importance of medical supervision over their work, had patronized lay laboratories. The work of the Council has been responsible to some extent for the decrease in the use of lay clinical laboratories by the medical profession. The patient should be given the benefit of the most accurate analysis with regard to the source, nature and progress of disease. In order that this may be assured, physicians should have their work carried out in laboratories under the supervision of capable physician-pathologists.

In 1928 the Section on Radiology requested the Council to carry out a similar work for radiologists. A list of physicians specializing in radiology is also maintained by the Council in the same manner as the list for pathologists and clinical pathologists. At the present time, 1,230 radiologists have been admitted to the Council's list.

METHOD OF PREPARATION

The method of preparing a list of physicians specializing in pathology and clinical pathology is as follows:

- 1 Physicians expressing a desire to be considered for listing receive a form on which they submit data regarding their medical graduation, internship, licensure, postgraduate work, experience, special society affiliation, hospital appointments, publications and other pertinent data.

- 2 The data submitted are verified by comparison with the biographic files of the American Medical Association, by the official reports of their medical college of graduation, and by reports from hospitals or medical institutions in which the candidates may have served. Former teachers, preceptors and associates are often consulted. The official reports received from boards of medical education and licensure are checked, and membership in special societies is confirmed. Records in government service or other employ are used.

- 3 The questionnaires are then reviewed in the office of the Council and those which, by their own statements, clearly do not fulfill the essentials are eliminated. The names of applicants with their qualifications are sent to the members of the advisory committee. This advisory body numbers about 175 specialists, who were selected from among the pathologists who are best qualified to act in that capacity, nominations being made mainly by pathologists.

- 4 Advice regarding the eligibility of candidates is obtained from individual members of the advisory committee and each is asked to submit his opinion or recommendation independently of others. Recommendations regarding each candidate are, as a rule, secured from several advisers averaging from three to six. In the light of all data thus far obtained, the applications are then taken up by the Council on Medical Education and Hospitals at its next quarterly meeting.

The place of the Council on Medical Education and Hospitals in this work is that of an impartial, fact-finding, classifying body. The expense is borne entirely by the American Medical Association. The only motive is the substantial betterment of pathologic service.

BIBLIOGRAPHY

The initial steps, beginning with the authorization of the movement by the House of Delegates of the American Medical Association at the annual session in San Francisco in 1923, are given in *THE JOURNAL*, April 3, 1926. That article contains the names of the members of the joint committee and gives a detailed account of the work of the committee and the Council on Medical

Education and Hospitals during the years 1923, 1924 and 1925. It contains a copy of the original questionnaire and the compilation of statistics on clinical laboratories gathered from all states of the Union by means of that questionnaire. Of special importance are the principles stated by the joint committee at that time—important because most of them still hold good, yet some of them would hardly be regarded as pertinent at the present time. The first provisional list was published in the report just referred to. Subsequent developments in the evolution of the list, and particularly the changes in the list itself, are reflected in the following references.

The second publication of the list appeared in *THE JOURNAL*, March 12, 1927, and contained 145 names, the list was next published in the Tenth Edition of the American Medical Directory in May, 1927, and contained 145 names, in *THE JOURNAL*, March 24, 1928, 160 names, March 30, 1929, 174 names, in the Eleventh Edition of the American Medical Directory, July, 1929, 175 names, in *THE JOURNAL*, March 29, 1930, 178 names, May 23, 1931, 183 names, and in the Twelfth Edition of the American Medical Directory, June, 1931, 183 names, in *THE JOURNAL*, Oct. 22, 1932, 538 names.

The following list in this issue contains 704 names

ESSENTIALS FOR THE LISTING OF PHYSICIANS SPECIALIZING IN PATHOLOGY AND CLINICAL PATHOLOGY

Admission to the list is open to all physician-pathologists engaged in pathologic work in accordance with the "Essentials," whether connected with a hospital or not. The work of compiling a list of qualified pathologists according to these "Essentials" is done by the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago.

Definition—A physician holding himself out as a specialist in pathology may be defined as follows. One who is a graduate in medicine having had satisfactory training and experience in pathology, chemistry, bacteriology or other allied subjects for at least three years subsequent to graduation, who is in good standing and has been duly licensed to practice medicine.

Qualifications—(a) The pathologist shall be on a full or part time basis with a laboratory for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods for the purpose of ascertaining the presence, nature, source and progress of disease in the human body. He should devote the major part of his time to work in this field.

(b) Pathology should be practiced on the same scientific and ethical basis whether in the hospital or in a detached laboratory. The work represents the practice of medicine as in other specialties.

The pathologist may make diagnoses only when he is a licensed graduate of medicine, has had satisfactory training and experience in pathology for at least three years subsequent to graduation from medical college, is reasonably familiar with the manifestations of disease and is competent to make reliable reports.

(c) **Assistant**—The pathologist may have a corps of qualified assistants and technicians, responsible to him, and for whom he is responsible, to carry out promptly, intelligently and accurately the several kinds of service

the laboratory offers. All their reports, not only of tissues but also of all bacteriologic, hematologic, biochemical, serologic and pathologic data, should be made to the pathologist.

Scope—A general pathologic laboratory should be prepared to render the following services:

(a) **Hematologic**—Blood counts, blood groupings and coagulation tests, and tests for blood parasites in general.

(b) **Biochemical**—Qualitative and quantitative analyses of urine, blood, gastric contents, body fluids, feces, intestinal contents and cerebrospinal fluids, renal and hepatic function tests and basal metabolism.

(c) **Bacteriologic**—Bacteriologic diagnoses, preparation of vaccines and blood and body fluid cultures.

(d) **Serologic**—Serologic diagnoses, agglutination, complement fixation, or precipitin and lysis tests.

(e) **Pathologic**—Preparation of paraffin, celloidin or frozen sections, microscopic and gross pathologic specimens and necropsies.

(f) **Parasitologic**—Protozoal and zoological diagnoses.

(g) **Metabolic**—Disorders of metabolism.

(h) **Cardiologic**—Disorders of the heart.

It is of course not expected that the candidate shall be prepared to render all the services mentioned, since the work must necessarily be diversified in larger laboratories and in smaller laboratories it is not always practical to have equipment and setups that would be used only occasionally. Since many pathologists limit their work to one branch of the specialty, referring certain items, far more efficiency is to be expected.

Reports—Reports should be made solely to the physician in charge of the patient and should be signed by the pathologist. All blanks and reports should have the name of the director printed on them and, if of a diagnostic or prognostic character, the name of the staff physician also.

Records—Full records of all examinations made by the pathologist, suitably indexed and filed, are essential. Every specimen analyzed in the laboratory should be given a serial number, which should follow that specimen in the records and reports. When the laboratory report concerns a hospital patient, an exact transcript of the laboratory record should be appended to the hospital case record. Each specimen submitted to the laboratory should be accompanied by pertinent clinical data.

Library—The laboratory should be provided with, or have convenient access to, a library including current scientific books and journals on all the various subjects required in its work.

Fees—There should be no dividing of fees or rebating between the laboratory or its pathologist and any physician, corporate body or group.

Publicity—Publicity should be in professional good taste and be limited to statements of fact, as the name, address and telephone number of the laboratory, names and titles of the pathologist and other active responsible personnel, fields of work covered, office hours, directions for sending specimens, and the like, and should not contain misleading statements or claims of unusual superiority. It should not advocate medical fads nor lay undue stress on the importance of laboratory observations.

Only the names of those rendering regular service to the laboratory should appear on letterheads, or any

other form of publicity, as being connected with the laboratory

Advertising matter should be directed only to physicians either through bulletins or through recognized

technical journals, and never to the nonprofessional public, as, for example, by announcements in popular journals and periodicals, circulars, pamphlets, telephone lists or other means

PHYSICIANS SPECIALIZING IN PATHOLOGY AND CLINICAL PATHOLOGY

The following list contains the names of 704 physicians specializing in pathology, laboratory diagnosis or clinical pathology, who returned the questionnaire, who were found to meet the Essentials" and were recommended by the Council's advisers. Those engaged in teaching, research and other activities are admitted as well as those in active practice. For the list of physicians specializing in pathology in government service, see page 1237

ALABAMA		NAME		ADDRESS		NAME		ADDRESS	
Birmingham		O'Reilly B C N		870 Market St		Atlanta		GEORGIA	
Graham Geo S		Perry Isabella Hester		2d and Parnassus Ave		Ayers A J		384 Peachtree St	
Fairfield		Smith Plmer Wm		2200 Hayes Ave		Bishop Everett L		Steiner Cancer Clinic	
Jones Walter C		Smith Pearl M		3700 California St		Klugh Geo F		139 Forrest Ave N E	
Tennessee Coal Iron and Railroad Hospital		Stowe W Parker		St Luke's Hospital		Mestre Ricardo		589 Martine Dr	
Montgomery		Victors Frnst A		490 Post St		Norris Jack C		50 Armstrong St	
Trumper Abraham		Wyckoff Harry A		Clay and Webster Sts		Augusta		Mosteller Ralph	
ARIZONA		San Jose		Campbell Lenore D		Pund Edgar R		1550 Walton Way	
Phoenix		Santa Anna		995 E Santa Clara St		Emory University		Univ of Ga Med Dept	
Mills H P		Martell B S		115 Owens Dr		Kracke Roy R		Wesley Memorial Hospital	
Tucson		Santa Monica		1250 16th St		ILLINOIS		Bloomington	
Hallinan Edward Leo		Kosky Alfred A		958 24th St		Markowitz Benj		219 N Main St	
Hicks Robert Alan		McLean Wm J		Stockton		Chicago		Arkin Aaron	
ARKANSAS		Holliger Chas D		242 N Sutter St		Benjamin Eustace L		20 E Washington St	
Hot Springs		COLORADO		Colorado Springs		Croy C Churchill		1103 Bryn Mawr Ave	
Lee Dee C		Ryder Charles T		1626 Wood Ave		Davidsohn Israel		25 E Washington St	
Little Rock		Staines M Ethelyn		23 E Pikes Peak Ave		Delaney P Arthur		270 W 10th Pl	
Hoge S F		Denver		Black William C		Fishback Hamilton R		8114 Euclid Ave	
Thatcher Harvey S		Carson Paul C		4200 E 9th Ave		Cardner Stella M		303 E Chicago Ave	
Pine Bluff		Dobos E I		Presbyterian Hospital		Hennemeyer R J		30 N Michigan Ave	
Plittman Wm G		Guttman Paul H		1818 Humboldt St		Hirsch Edwln F		1305 E 63d St	
CALIFORNIA		Freshman A W		227 16th St		Howell Katharine M		1120 Leavitt St	
Berkeley		Jones Rodney H		4200 E 9th Ave		Jaffe Richard H		1439 S Michigan Ave	
Relch Wm W		Mugrage Edward R		227 16th St		Kearns Jerry Joseph		2839 Ellis Ave	
Hollywood		Williams Wm W		4200 F 9th Ave		Kremer Rudolph J		533 Grant Pl	
Andrews Vernon L		Pueblo		4200 E 9th Ave		Levinson Samuel A		4408 Madison St	
Loma Linda		Dunlop J N		209 16th St		Lewis Julian H		541 Garfield Ave	
Cutler O I		Maynard C W		Corwin Hospital		Lincoln Mary C		1817 W Polk St	
Long Beach		Woodmen		702 N Main St		Matthies M M		5200 Wabash Ave	
Mikels Benjamin M		Downing Edgar D		CONNECTICUT		Melnick Perry J		30 N Michigan Ave	
Shackford B C		Hartford		Allen Wilmar M		Moore Josiah J		37 N Wabash Ave	
Los Angeles		Hastings Louis P		20 S Hudson St		Murphy Leonard J		Cook County Hospital	
Bettin Mona E		Kendall Ralph E		370 Collins St		Nicol H K		1517 W Polk St	
Bonyngue Chas W		Middletown		20 S Hudson St		Petersen A S J		185 N Wabash Ave	
Brem Walter V		Fisher Jessie W		28 Crescent St		Petersen Wm F		4408 Malden St	
Butt Edward M		New Britain		92 Grand St		Pilot Isadore		Central Ave and Flournoy St	
Evans Newton		Loud Norman W		306 Orchard St		Pribram Ernest		2839 Ellis Ave	
Hall Ernest M		New Haven		Bartlett Chas J		Rukstnat George J		303 E Chicago Ave	
Hammack Roy W		Norwalk		Murray Archibald		Saphir Otto		5 E Washington St	
Hill Robt B		Stamford		Weaver Bruce S		Simonds James P		3601 N Crawford St	
Hyland Clarence W		Wilmington		Bringingman Gladys H		Swan Mary H		2839 Ellis Ave	
Kimball Theodore S		Washington		Cajigas Tomas		Sweeney Henry C		Dept of Path Univ of Chicago	
Maner Geo D		Cholsser Roger Morrison		1801 Eye St N W		Thalhimer Wm		Evanston	
Iraitt Orlyn B		Kelly Robert A		1335 H St N W		Wells H Gldeon		Gunn Francis D	
Setzler Geo B		Langenstrass K H		3900 Reservoir Rd		Wilson W Henry		Schultz Oscar T	
Zeller A H		Lindsay Janvier W		1801 Eye St N W		Moline		204 Scott St	
Oakland		Neuman Lester		1835 Eye St N W		Yollmer Maud J		1630 Fifth Ave	
Glenn Robt A		Rice E Clarence		1726 Eye St N W		Bohrod Milton G		108 Edgell St	
Moore Gertrude		Selling Maurice A		FLORIDA		Cohen Frank		529 Hampshire St	
Michael Paul		Jacksonville		Dyrenforth L Y		Rockford		507 Chestnut St	
Pasadena		Kirk Wm W		208 Laura St		Springfield		8th and Mason Sts	
Burrows Montrose T		Royce Clayton E		1022 Park St		Bluffton		INDIANA	
Foord Alvin G		Miami		603 S W 2d St		Nickel Allen A C		Caylor Nickel Clinic	
Ruediger Gustav F		Tampa		Mills Herbert R		Evansville		614 Mary St	
Sturdivant B Frank		San Diego		San Francisco		McGlumphy Chas B		412 S E 4th St	
Case Lucius W		Ball Howard A		Bolin Zera E		Fort Wayne		347 Berry St	
Redlands		Elliott Frances P		Carr Jesse L		Indianapolis		Banks Horace M	
Taltavall Wm A		Pickard Rawson J		Lippman Marion H		Ferry Frank		3631 Forest Manor Ave	
Sacramento		Thompson Harold A		McNaught James B		Langdon Harry K		4036 Capitol Ave	
Braadadt Louis H		San Jose		Oliver Harry R		Thornton Harold C		23 E Ohio St	
Christman Paul Wm		San Jose		Lafayette		Hunter Frank P		Indianapolis City Hospital	
Front and Dickenson Sts		San Jose		Lafayette		Lafayette		300 Main St	
233 A St		San Jose		Lafayette		Lafayette		Lafayette	
520 E St		San Jose		Lafayette		Lafayette		Lafayette	
2001 4th Ave		San Jose		Lafayette		Lafayette		Lafayette	
233 A St		San Jose		Lafayette		Lafayette		Lafayette	
450 Sutter St		San Jose		Lafayette		Lafayette		Lafayette	
15 Santa Paula Dr		San Jose		Lafayette		Lafayette		Lafayette	
135 Stockton St		San Jose		Lafayette		Lafayette		Lafayette	
Clay and Webster Sts		San Jose		Lafayette		Lafayette		Lafayette	
490 Post St		San Jose		Lafayette		Lafayette		Lafayette	

NAME	ADDRESS	NAME	ADDRESS	NAME	ADDRESS
Muncie					
Cole Russell E	2400 University Ave	Fall River		St Louis	
South Bend					
Glordano Alfred S	531 N Main St	Peasley Elmus D	1820 Highland Ave	Allen Hollis N	831 N Grand Blvd
Lyon, Marcus W Jr	122 N Lafayette Blvd	Walsh James H	538 Prospect St	Buhman Rudolph	539 N Grand Blvd
Terre Haute					
Selsam Etta	221 S 6th St	New Bedford		Gradwohl R B H	3514 Lucas Ave
		Wason Isabel Mary	146 Cottage St	Harris D L	508 N Grand Blvd
IOWA					
Cedar Rapids		Newton		Ives Geo	3720 Washington Blvd
Mulsow Fredk W	120 3d Ave S E	Dairymple S C	2014 Washington St	Klenk Chas L	508 N Grand Blvd
Cherokees		Pittsfield		McCordock Howard A	Washington Univ
Pope, John M		Crisctiello Modestino	8 Bank Row	Schery Chas Wm	1426 Carroll St
Clinton					
Boyer Edward E H	114 32d Ave N	Springfield		Thompson Ralph L	607 N Grand Blvd
Davenport		Dwyer John E	146 Chestnut St	Walsh L S Newman	5535 Delmar Blvd
Lamb Frederick H	220 Main St	Westboro		Springfield	
Dubuque		Pierce Lydia B		Dahlstrom Arthur Wm	200 Pershing St
McNamara Frank P	1596 Delhi St	Worcester		Stone Murray C	200 E Pershing St
Iowa City				MONTANA	
Herrmann Walter W	University of Iowa	Elloff William J	119 Belmont St	Peterson Raymond F	57 W Quartz St
Ottumwa		Freeman William	Box 489	Great Falls	
Hecker Friedrich A	130 E Maple Ave	Goodale Raymond H	71 Jacques St	Hitchcock E D	Great Falls Clinic
Sioux City		Looney Joseph M	Worcester State Hospital	Walker Thos J	503 1st Ave N
Starry Allen C	21st and Court Sts	MICHIGAN			
KANSAS					
Kansas City		Ann Arbor		NEBRASKA	
Wahl Harry R	39th St and Rainbow Blvd	Bugher John C	106 Pleasant Pl	Omaha	
Salina		Gordon Harold	200 N State St	Eggers Harold E	Univ of Nebr
Moses Howard N	100 S Santa Fe St	Howard S C	326 N Ingalls St	Manning E T	107 S 17th St
Topeka		Weller C V Dept of Path Univ of Mich		Moody W B	206 S 19th St
Lattimore John L	901 Kansas Ave	Battle Creek		Rubnitz A S	107 S 17th St
Wichita		Roth Paul	Battle Creek Sanitarium	Russom B Carl	386 N 14th St
Hellwig C Alexander	928 N Emporia Ave	Bay City		Tollman James P	42nd and Dewey Ave
KENTUCKY					
Lexington		Gamble Wm G Jr	16th and Franklin Sts	NEVADA	
Maxwell Elmer S	190 N Upper St	Detroit		Reno	
Louisville		Amolsch Arthur L	Detroit Coll of Med	Parsons Lawrence	235 W 6th St
Allen John D	608 S 4th St	Brines Osborne A	2201 E Jefferson Ave	NEW HAMPSHIRE	
McNeill Clyde	321 W Broadway	Clark Harry L	5937 Woodward Ave	Hanover	
Miller Aura J	323 E Chestnut St	Cope Henry E	1551 Woodward Ave	Miller Ralph E	9 Downing Rd
Weeter Harry M	332 W Broadway	Davis James E	1512 St Antoine St	NEW JERSEY	
LOUISIANA					
Lake Charles		Hartman Frank W	2799 W Grand Blvd	Asbury Park	
Hebert Louis A	834 Ryan St	Morse Philm F	3825 Brush St	de Pons Isabel S C	501 Grand Ave
Monroe		Oglnsky M A	226 Hancock Ave E	Pons C A	501 Grand Ave
Pracher John	301 Jackson St	Owen Clarence I	4160 John R St	Atlantic City	
New Orleans					
Friedrichs Andrew V	921 Canal St	Stafford Frank W	33 W Vernor Highway	Hilduffe Robt A	26 S Ohio Ave
Johns Foster M	927 Canal St	Grand Rapids		Bayonne	
Lanford John A	3516 Prytanla St	Bond Geo L	74 Ionia Ave N W	Antopol Wm	Bayonne Hospital
Lawson Edwin H	2700 Napoleon Ave	German Wm M	Blodgett Memorial Hospital	Elizabeth	
Maher Alden	228 St Charles St	Miller Margaret A	Butterworth Hospital	Casilli A R	618 Newark Ave
Shreveport					
Butler Willis P	941 Margaret Pl	Grosse Pointe		Englewood	
Ellis Fredk G	624 Travis St	Gruhlit O M	580 Hampton Rd	Halpern Herman	143 Eagle St
MAINE					
Bangor		Kalamazoo		Greystone Park	
Thompson H E	250 State St	Prentice Hazel R	3404 Oakland Dr	Christian Thos B	
Lewiston		Saginaw		Jersey City	
Belliveau Romeo A	89 Pine St	Lohr Oliver W	302 S Jefferson St	Alter Nicholas M	410 Fairmount Ave
Gottlieb Julius	334 Main St	MINNESOTA			
Portland					
Long Alfred G	60 Leland St	Duluth		Newark	
Warren Mortimer	22 Arsenal St	Berdez George Louis	St Marys Hospital	Brown Lewis W	15 Fulton St
MARYLAND					
Baltimore		Minneapolis		Echikson Joseph I	845 S 12th St
Collenberg Henry T	2 W Read St	Baker Looe	1111 Nicollet Ave	Goldberg Samuel A	27 S 9th St
Cichner Manuel G	2426 Eutaw Pl	Drake Charles R	900 Nicollet Ave	Gray John W	142 Clinton Ave
Maldels Howard J	101 W Madison St	Grave Floyd	823 Nicollet Ave	Taguda Asher	201 Lyons Ave
Spencer Hugh R	University of Maryland	Lufkin Nathaniel H	424 W Diamond Lake Rd	Orange	
MASSACHUSETTS					
Boston		Merkert Geo L	825 Nicollet Ave	Cline Benj F	264 Central Ave
Belding David J	80 E Concord St	Smith Margaret I	2627 Chicago Ave	Patterson	
Branch Chas F	80 F Concord St	Rochester		Kim Gay B	703 Main St
Burnett Francis L	205 Beacon St	Beaver Donald C	Mayo Clinic	Pittsfield	
Davies Andrew H	195 Pilgrim Rd	Broders A C	Mayo Clinic	Borow Louis S	934 Park Ave
Hinton Wm A	25 Bennett St	Kernohrn J W	Mayo Clinic	Teaneck	
Hooker Sanford B	80 E Concord St	MacCarty Wm C	Mayo Clinic	Markley Luther A	Holy Name Hospital
Leary Olga Cushing	43 Bay State Rd	Magath Thos B	Mayo Clinic	Toms River	
Leary Timothy	43 Bay State Rd	Robertson H E	Mayo Clinic	Halbach Robert M	513 Main St
Mallory Tracy B		Rosenow E C	Mayo Clinic	Trenton	
Massachusetts General Hospital		Sanford Arthur H	Mayo Clinic	Rogers Wm N	125 Brunswick Ave
Ostin J Edwin	30 Huntington Ave	Wellbrock Wm L A	Mayo Clinic	NEW MEXICO	
Rooney James Stewart	1153 Center St	Wilson Louis B	Mayo Clinic	Albuquerque	
Schlesinger Monroe J	330 Brookline Ave	St Cloud		Van Atta J R	221 W Central Ave
Steele Albert J	475 Commonwealth Ave	Stangl Fred H	101 7th Ave S	NEW YORK	
Ulrich Helmut	30 Huntington Ave	St Paul		Albany	
Warren Shields	195 Pilgrim Rd	Heda Kano	125 W College Ave	Chilbert Ruth	116 N Allen St
Bradford		Noble John Franklin	Ancher Hospital	Horner Henrietta Cathoun	171 S Main Ave
Bartlett Bernice A	11 Hascelline St	MISSISSIPPI		Jacobsen V C	Albany Med Coll
Greenville				Klinck Gustavus H	Albany Med Coll
White E T	301 W Washington Ave	Vicksburg		Wright A W	136 S Lake Ave
Columbia				Binghamton	
Neal M Pinson	1309 Bouchelle Ave	Lippincott Leon S	920 Crawford St	Bergstrom V W	21 Park Ave
Kansas City		MISSOURI		Gregory Hugh S	Binghamton State Hosp
Duncan Ralph Emerson	306 E 12th St	Brooklyn		Black F A	
Hall Frank J	306 E 12th St	Derby Irving Marsh		Felm M J	
Hellwig Ferdinand C	St Luke's Hospital	Fink Harold		Goldzieher Max A	
John on Emley T	St Joseph Hospital	Grainel Abraham		Greeley Horace	
Koritschoner Pobj	4949 Rockhill Rd	Kantrowitz Abraham P		Lederer Max	
Narr Frederick C	Be arch Hospital	1117 Grand Ave		555 Prospect St	
Stewart Edward L	1117 Grand Ave	1103 Grand Ave			
Trimble Wm H					

NAME	ADDRESS
Marten M Edward	515 Ocean Ave
Moltisr Wm Jr	1219 Dean St
Morrison Maurice	250 Ocean Pkwy
Nidish Edward H	1272 Bergen St
Polayes Sllik H	425 Prospect Pl
Buffalo	
Bentz Charles A	126 W Humboldt Pkwy
lmann Ernest B	462 Grider St
Jacobs William F	408 Richmond Ave
ughan Stuart L	100 High St
Warwick Margaret	875 Lafayette Ave
Williams Herbert U	24 High St
Central Islip	
Trygstad Reldar	Central Islip State Hosp
Clifton Springs	
Thomas Walter S	42 Kendall St
Corning	
Shafer Rudolph J	163 E 1st St
Cortland	
Wall Wm A	134 Homer Ave
Elmira	
Bleyer Leo F	355 E Market St
Stuart Anna M	656 Park Pl
Glen Falls	
Maslon Morris	191 Glen St
Ithaca	
Hauenstein B F	Tompkins Co Memorial Hospital
Jamaica	
Buxbaum Edward J	8711 150th St
Campbell N H M	99 18 139th St
Werne Jacob	89 04 148th St
Kings Park	
Priestman Gordon	
Little Neck	
Van Nostrand Hobart S	45 06 Little Neck Pkwy
Long Island City	
Angrist Alfred	43 42 45th St
Hala Wm W	30 20 29th St
Middletown	
Kelly Wm E	Middletown State Homeopathic Hosp
Newark	
Baumgartner E A	Newark State School
Newburgh	
Wescott A M	231 Liberty St
New Rochelle	
Brooks Henry T	35 Woodland Ave
McIlroy P T	421 Huguenot St
New York	
Aronson Wm	150 E 182d St
Brown Chester R	150 W 87th St
Cocheu Lindsley F	205 E 69th St
Curphey Theodore J	115 E 61st St
Darlington Charles G	75 E 55th St
Dolgopol Vera B	131 W 110th St
Donnet J Victor	152 W 58th St
DuBols Phebe L	150 E 73d St
Eggston Andrew A	653 Park Ave
Ehrlich Joseph C	155 E 91st St
Eiser Wm J	525 L 68th St
Felsen Joseph	667 Madison Ave
Foot Nathan Chandler	525 E 68th St
Fraser Alexander	338 E 26th St
Frosch Herman L	1882 Grand Concourse
Gelger Jacob	Central Park West
Gonzales Thomas A	56 E 87th St
Grauer Frank	226 W 71st St
Hadjopoulos L G	6 E 78th St
Heltzmann Louis	38 W 90th St
Hillman Oliver S	140 E 54th St
Hochman Charles H	2715 Grand Concourse
Jeffries Ferdinand M	18 E 41st St
Jessup D S D	621 W 113th St
Kaliski David J	70 E 83d St
Klemperer Paul	385 Central Park West
Kopel Moses	1454 Grand Concourse
Larimore L D	729 Riverside Dr
MacNeal W J	303 E 20th St
Manhels Perry J	27 W 96th St
McNeill Archibald	18 E 41st St
Olcott Charles T	1300 York Ave
Pincus Julius	250 W 75th St
Price Aaron S	335 W 50th St
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SATURDAY, OCTOBER 14, 1933

VOLATILE POISONS IN THE AMERICAN HOME

Modern chemical industry in its many branches contributes greatly to the comforts and even luxuries of life. At the same time it introduces new hazards to health and even to life. While these hazards arise primarily in industry and can there be minimized by adequate precautions, safety supervision and compensation for injuries, they now invade nearly every American home, and in the home there is little protection and no compensation for injuries. New solvents for cleaning purposes, new forms of paint, new refrigerants for gas and electrical refrigerators, new drugs, new textiles to imitate silk and other fabrics, and new materials for a wide variety of other uses are already generally introduced. More are appearing constantly to improve or replace the materials formerly used. Some of these materials appear to be entirely harmless, others are distinctly poisonous. This defect, however, should not prevent their use for proper purposes with adequate precautions. Their advantages must be retained. Knowledge must serve as a protection from their perils.

Among the substances that have marked toxic qualities, various volatile liquids are especially important both in their convenience for household use and in their risks to health. The fatalities that resulted from methyl chloride poisoning in Chicago apartment houses, where this gas escaped from refrigerators, are still fresh in the public mind. Benzene is not only a factory hazard but when used in asphalt paint on hot metal in an unventilated place may induce illness or death. Methanol in varnish may cause blindness. The only protection for the public against this risk at present is a gentleman's agreement among the more public spirited manufacturers not to yield to the temptation of cheapening production by using methanol in varnish. A nationwide disaster with a probability of hundreds of poisonings was barely averted a few years ago when the sale to the public at gasoline filling stations of concentrated tetra-ethyl lead was replaced by the relatively

safe ethyl gas, in which the lead is already mixed before distribution. In regard to refrigerators the choice of safety or danger seems to depend less on what particular refrigerant is used than on the quantity. In single unit installations the amount is small. In multiple installations, particularly in apartment houses the amount is large, and the whole of it may escape into a single apartment when a leak occurs. One of these refrigerants, the new dichlorodifluoromethane, is practically nontoxic,¹ yet when stored in large amounts in the basement to supply many refrigerators from a single tank and compressor it might produce a veritable war gas wave in case of fire to overwhelm the firemen. Safety seems now to require that such substances be used only in single units of household size.

One of the most widely used volatile liquids is carbon tetrachloride. For purposes of dry cleaning this liquid has the great advantage over many other solvents of grease in that it is noninflammable. Fire risks, and therefore fire insurance rates, for plants using carbon tetrachloride are much less than when such inflammable liquids as naphtha or gasoline are used. As "carbona," carbon tetrachloride goes into the home chiefly to remove grease spots. Its use has aided to diminish the injuries and deaths from burns that formerly resulted from the household use of such inflammable cleaning fluids as naphtha. The public is, however generally quite unaware that carbon tetrachloride is a powerful anesthetic and nearly as toxic as chloroform. Butsch² has recently reported a case in which a man who was employed to clean telephones with this substance has apparently suffered irreparable damage to the liver. Cases have also been reported from Switzerland of illness from a floor wax liquefied with carbon tetrachloride and used in school rooms.³ There have been many cases of partial poisoning from nearly every use of this substance by persons who appreciated its advantages but were unaware of the precautions necessary against its dangers. With reasonable care, most of these uses would be quite safe, the danger results from ignorance and lack of warning regarding the poisonous properties of carbon tetrachloride and from the fact that the substance is generally sold for household use not under its scientific name but under such trade names as "carbona" and "pyrene."

When carbon tetrachloride is used to extinguish fires in closed spaces, the results may be disastrous. The New York Times for July 7, 1922, reported a fire in the subway on which "pyrene" was used with the result that 150 persons were overcome by the fumes. In adjoining columns of the Times a statement from the

1 Sayers R R Yant W P Chornyak John and Shoaf H W. Toxicity of Dichlorodifluoromethane a New Refrigerant. Report of Investigations 3013 Bureau of Mines 1930

2 Report on Dichlorodifluoromethane National Board of Fire Underwriters Oct 10 1931 Williams E T and Kenlon J A Brief Before the Fire Department of the City of New York Board of Hazardous Trades in the Matter of Freon Dichlorodifluoromethane

3 Butsch W L Cirrhosis of the Liver Caused by Carbon Tetrachloride J A M A 99 728 (Aug 27) 1932

4 Henggele A Serious Poisoning with Carbon Tetrachloride Schweiz med Wchnschr 61 223 (March 7) 1931 abstr J A M A 96 1917 (May 30) 1931

Chemical Warfare Service of the United States Army set forth the well known fact that carbon tetrachloride is like chloroform in that when the liquid is sprayed on a fire, or its vapor is mixed with flame, it produces phosgene, one of the most deadly of war gases. From the subway fire no deaths resulted, but in the United States Navy at the Portsmouth Navy Yard in 1919 two men died from the fumes produced when the clothing of one caught fire and was extinguished with "pyrene."

Experience has demonstrated that carbon tetrachloride has excellent fire-extinguishing properties. "Pyrene" in the small fire extinguishers often carried in automobiles has saved many a car from destruction and its owner from injury by explosion of gasoline vapor. In the open air the danger from poisoning is small, but as the result of an investigation of this subject in the Bureau of Mines⁵ the conclusion was reached that carbon tetrachloride should not be used for this purpose in confined spaces. Accordingly, under the influence of that bureau the use of carbon tetrachloride in mines has been generally stopped. Unfortunately the American home is not so well protected, as carbon tetrachloride fire extinguishers are sold to the public for use in homes with no statement on the label of the containers as to the conditions under which their use is dangerous.

Of such dangers from well known toxic substances that go into the modern American home it would be easy to make an extensive list. But even more important is the risk from new substances the toxic qualities of which are as yet undefined by experience or investigation. At the last session of Congress a bill⁶ was introduced in the United States Senate to require truthful labeling of volatile substances sold through interstate trade for household use. After a preliminary hearing before a committee of the Senate this bill was referred to the surgeon general of the Public Health Service for study, possibly for enlargement into a general poisons bill, and then for report back to the committee of the Senate. It is needed in regard not only to carbon tetrachloride and other substances of known toxicology but also to forestall the poisoning of the people in their homes by new substances of unknown toxicology. It should provide for investigation under government auspices of the toxic hazards of new substances before they are sold under some misleading trade name to an uninformed and as yet unprotected public.

PRESBYOPIA AND THE DURATION OF LIFE

Presbyopia has long been recognized as a condition that attacks human beings beyond middle age and gradually increases until the age of 60 years, after which it is likely to remain stationary. This recession of near point for vision is considered a normal process in the life cycle of the tissues of the eye. It is apparently associated with a change in the tissue of the lens in the direction of increased hardness and lessened elasticity. Because of this inability of the lens to stretch or relax in response to the demand for accommodation, the ability to see printed matter or objects held close to the eye is decreased.

Not long ago Steinhaus¹ developed the conception that a definite relationship exists between aging of the lens of the eye and aging of the body in general. He pointed out that Kronfeld had previously demonstrated that the energy requirements of the lens are the same as those of the erythrocytes. In spite of the peculiarities of the tissues of the eye, they seem to be governed by the same laws that control other tissues. The lens of the eye of a child is so elastic that it can readily assume any shape necessary for accommodation to vision at various distances. In near vision, extreme curving is necessary. As the human being becomes older, the tissues tend to lose their elasticity, as is visible in the case not only of the lens of the eye but also of the skin. The gradual hardening process that takes place with increasing age is a general process affecting all the tissues. When it affects the lens of the eye, the power of accommodation is impaired so that the near point for vision gradually moves farther away from the eye. Steinhaus was convinced that aging of the lens and of the body tissues generally continued in a parallel manner, and that by this means the degree of presbyopia found in any individual might be taken as an indication of life expectancy.

After propounding this theory, Steinhaus studied the records of the Leipzig clinic for diseases of the eye for the period from 1880 to 1908, and also for the years 1929 and 1930. For each year of persons over 40 years of age a presbyopic average was determined, and tabular statements were developed indicating the presbyopic averages expressed in diopters. In comparing with this average the degree of presbyopia in the different patients, he detected persons in whom the presbyopia was less than average, average and above the average. The tables seem to show that there is a relationship between the degree of presbyopia and the life expectancy. In persons in whom the presbyopia is less than average, life expectancy is much greater than in those in whom presbyopia is above the average. In persons between the ages of 40 and 50 the difference is as much as ten years in favor of the persons with a less than

⁵ Fieldner, A. C., Katz, S. H., and Kinney, S. P. Gas Vapors for Fires Met in Fighting Fires. Technical paper 248. Bureau of Mines. March 1921, pp. 18-20 and 38-43. Fieldner, A. C., Katz, S. H., Kinney, S. P., and Longfellow, E. S. Poisonous Gases from Carbon Tetrachloride Fire Extinguishers. J. Franklin Institute 190, 543 (July, Dec.) 1920. Cases Produced in the Use of Carbon Tetrachloride and Foamite Fire Extinguishers in Mine. Report of Investigations 2262. Bureau of Mines.

⁶ Senate bill 1953. Seventy-second Congress, first session, introduced by Senator Bingham and referred to the Committee on Agriculture and Forestry, the act to be cited as the Federal Volatile Poison Act, Volatile Poisons. Hearing before the Committee on Agriculture and Forestry, United States Senate on S. 1953. A Bill to Regulate Interstate and Foreign Commerce in Poisonous Volatile Substances Intended for Household Consumption. April 19, 1932. Washington Government Printing Office 1932.

¹ Steinhaus, Heinz. Relation of Presbyopia and Duration of Life with Consideration of Causes of Death. Arch. f. Augenh. 105, 731 (May) 1932.

average presbyopia. A sifting of the material according to causes of death showed a more noticeable relationship between presbyopia and duration of life in persons who died a natural death, for in these cases the aging process is the most important cause of death. As the sclerosis of the eye lens is an indicator for the advancement of the aging process in the vital organs, it is thus also an indicator of the life expectancy. From this Steinhaus concludes that the determination of presbyopia may be of value in the examination of applicants for life insurance. A classification of the material according to the sexes revealed that the presbyopic averages are the same in men and in women. The fact that women, as is generally known, have a higher life expectancy is not due to a lesser degree of aging but to other causes, such as their mode of life, which is generally quieter than that of men. The presbyopic averages of the material of 1929-1930 were found higher than those of the years 1880-1908, but the author thinks that this is due to changes in the method of prescription of glasses rather than in actual changes. For differences in the process of aging between urban and rural populations, between the different social classes and between different races there are some indications, but these were not definite.

Most of our means of determining changes in the elasticity of the blood vessels and of various other tissues of the body are clinical methods seldom permitting exact measurement. On the other hand, the methods of refraction that determine with remarkable exactness the relative elasticity of the lens may be considered a highly scientific and accurate means of measurement. If, therefore, the concept of Steinhaus is more definitely established by the accumulation of a considerable number of observations on large numbers of people, a simple means for aiding in determining life expectancy will be easily available.

Current Comment

LYMPHATIC BLOCKADE

The tendency of staphylococci to remain localized in infected areas and the usual spread of streptococci to surrounding tissues are well known clinical phenomena. Superficially, this suggests a relatively low virulence or toxicity for the staphylococcus, and a relatively high pathogenicity or invasive potential for the streptococcus. A quite different interpretation, however, is suggested by Menkin¹ of Harvard Medical School, who emphasizes differences in local tissue drainage. The Harvard investigator found that aleuronat and certain other injected irritants are usually fixed in local tissues, largely as a result of a mechanical blockade of the regional lymphatics. This blockade is caused by intraluminal plasma coagulation and the later formation of leukocytic plugs. Trypan blue

injected into the inflamed area is retained in the local tissues, while similar injections are rapidly drained from noninflamed control areas. Applying the same local drainage test to bacterial infections, he found in rabbits an effective regional lymphatic blockade within one hour after the subcutaneous injection of staphylococci. An equally effective regional blockade required at least forty-five hours with streptococci. Pneumococci occupied an intermediary position, effective regional blockade being established in about six hours. "Inasmuch as staphylococci, pneumococci, and streptococci spread from the site of cutaneous inoculation primarily through lymphatic channels," he says, "the difference in rapidity with which mechanical obstruction is set up in the areas inflamed by them will help to explain the differing invasive abilities of these pyogenic organisms."

THE WHITE BLOOD CELL COUNT

Scarcely a day passes in the lives of many physicians when they are not concerned with the "white blood cell count" of some patient. To base a diagnosis of disease on an aberration in the number of circulating leukocytes calls for dependable knowledge of normal conditions. Without this, rational judgments as to what constitute abnormal changes or pathologic signs cannot be formed. Just as the clinician takes into account the diurnal variations in body temperature when he uses the clinical thermometer, so the "rhythms" in white cell counts need to be considered if they are, indeed, physiologic realities. An "afternoon rise" has been described as an actual phenomenon, in contrast to some other variations now attributed to errors in technique. Reference was made some time ago in *THE JOURNAL*¹ to the conclusion that so-called digestive leukocytosis has been wrongly ascribed to alimentary causes. It was argued that physical or even mental exertion is the most conspicuous reason for these normal fluctuations in the increased numbers of white blood cells so often recorded after meals. Garrey² of Vanderbilt University at Nashville, who championed these views, contended that a count above 7,000 per cubic millimeter is evidence of mental or physical unrest and that all "basal counts" lie between the limits 5,000 and 7,000. Extensive investigations³ at the Washington Square College of New York University do not support this view but tend to indicate that mild activity has no constant effect on the count, although, as is well known, severe exercise may cause the number of leukocytes to rise to three or four times the normal figure. In persons at rest counts between 4,700 and 11,500 were obtained while the counts during activity varied between 3,500 and 11,500. The counts taken during activity were not uniformly higher than those obtained during complete rest, and just as frequently the two counts were substantially the same, or the count during activity was lower than that during complete rest.

1. An Explanation of Digestive Leukocytosis. *Current Comment J. A. M. A.* **72**: 1004 (April 5) 1919.

2. Garrey, W. E. and Butler. *Virginia Am. J. Physiol.* **100**: 351 (April) 1932.

3. Ponder, Eric; Saslow, George; and Schweizer, Malvina. *Quart. J. Exper. Physiol.* **21**: 21, 1932. Schweizer, Malvina. *The Basal Level of the White Cell Count in Man.* *Am. J. Physiol.* **105**: 217 (July) 1933.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8 55 to 9 o'clock central standard time, over Station WBBM (770 kilocycles, or 389 4 meters)

The subjects for the week are as follows

October 17 How to Care for the Heart
October 19 Parents Responsibility in Disease Control

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

October 21 The Battle of the Children

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

CALIFORNIA

Personal—Dr John J Miller Jr, who has been conducting research in whooping cough at the Statens Serum Institut Copenhagen, for the past year, will collaborate with Dr Albert P Krueger in a similar investigation at the University of California, Berkeley

Changes at University of California—Dr Herman M Adler, professor of psychiatry, University of California Medical School, San Francisco, will have the additional title of lecturer in jurisprudence during the present academic year New appointments include those of Drs Charles Weiss as associate professor of research medicine at the Hooper Foundation for Medical Research and Paul A Giebe as assistant clinical professor of neuropsychiatry in the medical school

Outbreaks of Food Poisoning—Four outbreaks of food poisoning were recorded during July according to the *Weekly Bulletin* of the California Department of Public Health One involved chocolate eclairs and another custard-filled cake Staphylococcal infection was responsible for both of these outbreaks In both of them the product had been shipped to another town from the locality where it was manufactured Eighteen cases of food poisoning occurred in a camp of young women The fourth outbreak involved nine cases in a labor camp Because of a shortage of ice in extremely hot weather, foodstuffs were not cared for properly In both these outbreaks the suspected food products were not available for laboratory study and the exact cause could not be determined

COLORADO

Dr Hall Honored—Dr Josiah N Hall Denver was given a dinner September 18 by the Medical Society of the County of Denver, in recognition of his completion of fifty years in the practice of medicine in Colorado There were 210 guests and the evening was concluded with the unveiling of a portrait of Dr Hall The portrait by Waldo Love, will be placed in the society's library Dr Robert Levy was toastmaster The speakers included Drs Hubert Work, former secretary of the interior Leonard Freeman John W Ames and George M Blickensderfer Dr Hall who is emeritus professor of medicine University of Colorado School of Medicine was president of the Colorado State Board of Medical Examiners in 1891 the state board of health in 1903 1904 the American Therapeutic Society in 1916 1917 and the Colorado State Medical Society in 1900 He was mayor of Sterling in 1888-1889 In addition to articles on diseases of the heart and lungs he is the author of *Borderline Diseases* and the section on gunshot wounds burns and scalds in Peterson and Haines' Text Book of Legal Medicine and Toxicology He served as a member of the Judicial Council of the American Medical Association from June 1921 to June 1931 was a member of the House of Delegates in 1903 and was again appointed in 1906 serving until 1908 and from 1919 to 1921

DELAWARE

Society News—At a meeting of the New Castle County Medical Society, Wilmington, September 19, Dr Edward S Dillon, Philadelphia, spoke on the reduction of mortality in diabetes Dr Thomas B Holloway Philadelphia, addressed the society, October 17, on exophthalmos and its significance

State Medical Election—At the annual meeting of the Medical Society of Delaware, September 26, Dr Joseph S McDaniel, Dover was elected president, Dr William H Speer, Wilmington, secretary, and Dr Alfred L Heck, Wilmington, treasurer, all to take office in January The next annual session will be held in Dover, Oct 9-10, 1934

DISTRICT OF COLUMBIA

Tumor Registry—A committee has been appointed by Dr Prentiss Willson, president Medical Society of the District of Columbia, to supervise a tumor registry recently established in the society's building Maintenance of the registry was authorized by the society, May 3 Dr Janvier W Lindsay was named chairman to serve three years Other members are the following physicians

Walter J Freeman three years	Claude Moore two years
Matthew White Perry three years	Frank J Eichenlaub one year
James A Cahill Jr two years	Vincent J Dardinski one year
Edmund Horgan, two years	Harrison H Leffler one year

GEORGIA

Society News—Speakers before the Ninth District Medical Society September 20, were Drs Grady N Coker, Canton, on *Rare Findings in the Surgical Abdomen*, and Daniel C Elkin, Atlanta, *Treatment of Aneurysm*—Dr Horace G Huey, Homerville, presented case reports before the Ware County Medical Society, September 6, on pernicious anemia, epithelioma of the forehead, aortic dilatation and pyloric stenosis

Department of Bacteriology Established—A department of bacteriology has been established at the University of Georgia Medical Department According to the *Journal of the Medical Association of Georgia*, the faculty of the department will include James A Kennedy, PhD, University of Rochester (N Y) School of Medicine, Dr Ferdinand C Lee, Johns Hopkins Hospital Baltimore, James O Pinkston, Harvard Medical School, Boston, and Dr Marion S Dooley, Syracuse University College of Medicine, Syracuse, N Y

IDAHO

State Medical Election—At the annual meeting of the Idaho State Medical Association in Twin Falls, September 18-19, Dr Charles R Scott, Twin Falls was named president-elect, to take office January 1 Dr John S Springer, Boise, will assume the presidency, January 1 The next annual session will be held in Lewiston in 1934 The following scientific program was presented at the meeting

Dr Alan L Hart Tacoma Wash	Tuberculin Testing and X Raying of Chests of School Children
Dr Harry E Kleinschmidt New York	Finding Tuberculosis in School Children
Dr George W Pierce San Francisco	Practical Application of Reconstruction Surgery and Rational Treatment of Cleft Lip and Cleft Palate
Dr Claude F Dixon Rochester Minn	Gout and Surgery of the Colon
Dr Dean Lewis Baltimore	President American Medical Association Tumors of the Breast and Fractures and Associated Injuries
Dr Martin B Tinker Ithaca N Y	Gout, Diagnosis and Permanence of Cure
Dr Alfred W Adson Rochester Minn	Value of Sympathectomy in the Treatment of Cord Bladder and Hirschsprung's Disease
Dr Harlow Brooks New York	The Heart in Influenza
Dr Platt W Covington Salt Lake City	field representative Rockefeller Foundation State Board of Health Organization
Dr Alton R Kulgore San Francisco	Breast Cancer Acceptable and Debatable Procedures A State Medical Society Cancer Organization

ILLINOIS

County Society Programs on Infectious Diseases—The Illinois State Health Department will institute a series of scientific programs for county medical societies at a meeting of the Fulton County Medical Society in Canton, October 18, as part of a campaign against epidemic diseases Four illustrated lectures covering encephalitis, infantile paralysis, influenza pneumonia, diphtheria, scarlet fever and other epidemic diseases will be presented at each meeting by staff members of the health department Lectures have also been scheduled for meetings in Charleston, Champaign, Danville, Marion, East St Louis and Quincy

Chicago

Special Annual Lectures—Dr Hugh H Young, clinical professor of urology, Johns Hopkins University School of Medicine, Baltimore, will present the fifth annual William T Belfield Lecture before the Chicago Urological Society at the Palmer House, October 18. His subject will be "Diagnosis and Treatment of Prostatic Obstruction." A dinner will be held in honor of Dr Young preceding the meeting, and his friends and those interested in urology are cordially invited.—Dr George Minot, professor of medicine, Harvard Medical School, Boston, will deliver the first Jessie Horton Koessler Lecture of the Institute of Medicine of Chicago, October 23, on "Anemia, Etiology and Treatment." The meeting will be held jointly with the Chicago Society of Internal Medicine at the Chicago Woman's Club.—Dr Alfred Blalock, associate professor of surgery, Vanderbilt University School of Medicine, Nashville, will give the fifth annual Arthur Dean Bevan Lecture of the Chicago Surgical Society at the Chicago Woman's Club, October 20. His subject will be "Acute Circulatory Failure as Exemplified by Shock and Hemorrhage."

MAINE

Tumor Clinic—The Maine General Hospital has established a tumor clinic, to be held every Thursday. A 50-cent charge will be made to those able to pay. Physicians throughout the state or elsewhere are requested to refer their patients for diagnosis and advice or treatment. It is hoped to make the clinic self supporting.

MASSACHUSETTS

Anniversary Celebration at Harvard—The one hundred and fiftieth anniversary of Harvard Medical School was observed, October 6-7. The medical school was opened, Oct 7, 1783, with the induction into office of Dr John Warren as professor of anatomy and surgery, and Dr Benjamin Waterhouse as professor of the theory and practice of physic, and the exercises were arranged to celebrate that event. The anniversary ceremony began, October 6, with a program at the medical school on Longwood Avenue and three of its affiliated hospitals: Massachusetts General, Boston City Hospital and Peter Bent Brigham. At a formal program held in Cambridge, October 7, the original exercises of 1783 were repeated in part, including reading of the original inaugural orations of Professors Warren and Waterhouse, and the psalms sung 150 years ago. Dr Warren's oration was read by Dr J Lewis Bremer, Hersey professor of anatomy, and that of Dr Waterhouse by Dr Henry A Christian, Hersey professor of the theory and practice of physic. These chairs are the two oldest endowed professorships in the medical school. Following the establishment of the first two professorships in medicine at Harvard in 1783, instruction was given in Holden Chapel until 1810, when classes were transferred to Boston. The first medical school building was erected in 1816. From 1882 to 1906 the school occupied the building at the corner of Boylston and Exeter streets, now used by Boston University. The group of white marble buildings on Longwood Avenue was completed in 1906 and Vanderbilt Hall, the dormitory for medical school students, in 1927. In 1788 the university conferred its first medical degree on two students, and, in 1933 131 degrees. The present teaching staff numbers more than 130.

MICHIGAN

Dinner to Dr Chadwick—The personnel of the Detroit Department of Health gave a farewell dinner, September 15, to Dr Henry D Chadwick, who has resigned as controller of tuberculosis to become state health commissioner of Massachusetts. Dr William A Evans presided at the dinner and Henry F Vaughan, Dr P H was the principal speaker. John F Norton, PhD also received a tribute at the dinner. He resigned from the health department to become laboratory director of the Upjohn Chemical Company, Kalamazoo.

Society News—Dr Hugo A Freund addressed the West Side Medical Society, Detroit, October 5, on "Diseases of the Coronary Arteries."—Dr George C Leckie, Detroit, addressed the Lambton County Medical Society in Sarnia, September 13, on roentgen studies of the urinary tract.—Dr Charles E Boys, Kalamazoo, addressed the physicians of Manistee Lake and Oceana counties September 21 at a meeting sponsored by the Mason County Medical Society, he spoke on goiter.—Dr Raymond W Waggoner, Ann Arbor spoke on epidemic encephalitis before the Washtenaw County Medical Society, October 10.

Dr Novy Appointed Dean at Michigan—Dr Frederick G Novy was appointed dean of the University of Michigan Medical School, Ann Arbor, September 22. In the past Dr Novy has been chairman of the executive committee of the school, which includes also Drs Udo J Wile, James D Bruce, Harley A Haynes and Arthur C Curtis. He will continue in this capacity while also holding the deanship. Dr Novy received his medical degree at the University of Michigan Medical School in 1891. He became associated with his alma mater in 1886 as assistant in organic chemistry and has been professor of bacteriology and director of the Hygienic Laboratory since 1902. His completion of forty-seven years on the faculty of the university was observed in May when the Genesee County Medical Society gave him a testimonial dinner. The medical school has not had a dean since Dr Hugh Cabot's resignation in 1930.

MINNESOTA

Personal—Dr William J Mayo, Rochester, has recently been made a foreign associate member of the Paris Academy of Medicine.

Society News—Dr Axel C Baker, Fergus Falls, was elected president of the Northern Minnesota Medical Association at its recent annual meeting in Willmar. Other officers are Drs Julian F Dubois, Sauk Center, and Oscar O Larsen, Detroit Lakes, vice president and secretary, respectively. The next annual convention will be held at Thief River Falls.—The prize essay of the Minnesota Academy of Medicine by John Chaplin Barton was read at the meeting, October 11, the title is "The Distribution of Intranuclear Inclusion Bodies Primarily Involving Vascular Endothelium." Mr Barton will be a candidate for the degree of doctor of medicine at the University of Minnesota School of Medicine, Minneapolis, in 1934. Dr Bertram S Adams, Hibbing, presented a thesis on "Gallbladder Disease."

MISSOURI

Tuberculosis Conference—The tuberculosis division of the St Louis Health Department will conduct its second annual clinical conference, October 23-November 6 and November 13-27. Clinical demonstrations in the diagnosis of early tuberculosis will be presented at the tuberculosis division of Isolation Hospital and Koch Hospital. The course will be practical and free of charge. Registration will close, October 15. Physicians wishing to attend should communicate with Dr Hyman I Spector, 35 Municipal Courts Building, St Louis.

NEBRASKA

Society News—Drs Charles W Mayo and Jacob Arnold, Barge, Rochester, Minn., addressed the Elkhorn Valley Medical Society, Norfolk, August 25, on "Medical and Surgical Management of Malignant Lesions of the Descending Colon and Sigmoid", Drs Ralph H Luikart and Arthur D Dunn, Omaha "Indications for Interference in Obstetrics" and "Position of Decapsulation of the Kidney in Urinary Suppression", respectively. Dr Dexter D King, York, was elected president.—Dr Benjamin J Clawson, Minneapolis, addressed the Omaha-Douglas County Medical Society, Omaha, September 26, on "Pathogenesis of Acute Rheumatic Fever."

NEW JERSEY

Society News—Henry F Vaughan, Dr P H, health commissioner of Detroit addressed a special meeting of the Medical Society of New Jersey at Newark, October 3, on the Detroit plan for medical participation in public health work.—The eastern section of the American Sanatorium Association held a meeting at Lakeland Sanatorium, October 6-7. Among speakers were Drs Louis H Clerf, Philadelphia, on "Bronchoscopy in the Treatment of Pulmonary Abscess and Bronchiectasis", Ronald V Christie, Montreal, Que "Physiological Readjustments to Pneumothorax", and Frederick M Allen, New York, "Insulin in Tuberculosis Treatment".—Dr Ross V Patterson, Philadelphia, addressed the Atlantic County Medical Society, Atlantic City, October 13, on "Coronary Thrombosis with Special Reference to Its Differentiation from Abdominal Surgical Conditions."

NEW YORK

District Meetings—The annual meeting of the eighth district branch of the Medical Society of the State of New York was held at the Cataract House, Niagara Falls, October 5. At the morning session Dr Charles H Goodrich, Brooklyn spoke on medical economics, and Drs Ivan Hekiman and Henry E Vogel, Buffalo, presented a study of diabetic deaths.

At the afternoon session Drs Joseph C Bloodgood, Baltimore, and E Ellice McDonald, Philadelphia, spoke on cancer—At the annual meeting of the third district branch of the Medical Society of the State of New York, Haines Falls, September 5, speakers for the scientific session were Drs Edward M Livingston, New York, on 'Interpretation of Abdominal Signs and Symptoms' Gilbert Horrax, Boston, 'Certain Forms of Increased Intracranial Pressure and Their Treatment' and Samuel T Orton, New York 'Some Varieties of Delayed Speech in Children'—At the annual meeting of the fourth district branch of the Medical Society of the State of New York in Malone, September 19, speakers included Drs Philip D Wilson and Frank H Lahey Boston on 'Fractures and Dislocations of the Elbow' and 'Diagnosis and Management of Goiter' respectively, and John H Wyckoff, Jr, New York, 'Present-Day Evolution of Medicine'

New York City

Personal—Dr William J Fordrunk Scarsdale, has been appointed head of the department of physiology and hygiene at Hunter College—Dr Thomas Darlington, health commissioner of New York from 1904 to 1910, celebrated his seventy-fifth birthday, September 24

Hospital News—Dr John E Daugherty has been appointed superintendent of Jamaica Hospital Richmond Hill—An alumni association of interns of Fifth Avenue Hospital was formed, September 27, with Dr Eric R Skoluda as president—Midtown Hospital has recently organized a dermatologic service with Dr Jerome Kingsbury as director

Patients for Study at Rockefeller Institute—The Hospital of the Rockefeller Institute for Medical Research announces that the following diseases will be made the subject of special investigation during the coming winter acute respiratory diseases chickenpox, measles, rheumatic fever heart disease, nephritis, anemia (aplastic idiopathic pernicious or severe microcytic), sprue, severe glossitis or stomatitis without anemia and a limited number of cases of epidemic encephalitis Suitable patients may be referred to the hospital by physicians and others willing to cooperate No charge is made for any services Physicians should communicate by telephone or in person with the resident physician before sending patients

Memorials to Pioneer Diphtheria Investigators—The twentieth anniversary of the introduction of diphtheria antitoxin into the United States and of the Schick test will be celebrated as part of the children's health fetes to be held as the climax of the immunization campaign now in progress in Bronx and Queens counties Memorials signed by thousands of immunized children in the two boroughs will be presented to Dr William H Park director of the bureau of laboratories of the New York City Department of Health, the pioneer in the use of antitoxin in this country and to Dr Bela Schick who developed the test by which immunity may be demonstrated It is hoped to reach about 80,000 unimmunized children during the present campaign

OHIO

Conference of Health Officers—The fourteenth annual conference of health officers of Ohio will be held in Columbus October 19-20 Among speakers will be Drs John H J Upham Columbus chairman Board of Trustees American Medical Association, on 'Postgraduate Work in Public Health', Edward S Godfrey, Jr of the New York State Department of Health Albany, 'Modern State Health Regulations' and Mr William R Foss state representative from Mercer County, 'What Is Wrong with Our Present Health Laws'

Illegal Practitioner Fined—Frank E McCartney, Cleveland is reported to have been fined \$200 and costs and sentenced to serve sixty days in the workhouse on a charge of manufacturing water for use as a medicine and \$300 and costs on a charge of practicing medicine after trial in police court September 1 It appears that the man, who was listed in the city directory as a physician—which he is not—had given electrical treatments to a woman and sold her five gallons of McCartney's Electrified Water for \$10 Analysis of the water is reported to have shown that it was ordinary Lake Erie water McCartney was released on \$1000 bond pending motion for a new trial

Memorial Meeting—An all day conference on tuberculosis will be held at State Sanatorium Mount Vernon October 18 as a memorial to Dr Charles O Probst Dr Herbert M Platter Columbus Mr James E Bauman assistant state director of health and Mr W H Dittoe sanitary engineer of the Mahoning Valley district will summarize Dr Probst's

work in public health Medical aspects of tuberculosis will be discussed by Drs Charles A Doan and Bruce K Wiseman, Columbus, and surgical aspects by Dr George M Curtis, Columbus Dr Probst, who died April 2, was for twenty-five years secretary of the state board of health and served as president of the American Public Health Association, Ohio Society for the Prevention of Tuberculosis and the Conference of State and Provincial Boards of Health

Society News—A symposium on epidemic (lethargic) encephalitis was presented at the first fall meeting of the Columbus Academy of Medicine, September 18, by Drs John H Hayes, Edson J Emerick and Roswell S Fidler—Dr George I Nelson, Columbus, addressed the Greene County Medical Society, Xenia, September 15, on cardiovascular diseases—Drs Edward J McCormack and Thomas L Ramsey, Toledo, addressed the Seneca County Medical Society, Tiffin September 21, on medical ethics and medical history, respectively—Dr Fred M Douglass, Toledo, addressed a meeting of the Marion County Academy of Medicine, September 5, on 'Management and Treatment of Biliary Infection'—Dr George M Curtis, Columbus was guest speaker at the first fall meeting of the Mahoning County Medical Society, Youngstown, September 19, on 'Significance of the Iodine Content of Human Blood'—Dr Walter G Stern, Cleveland, addressed the Summit County Medical Society, Akron, October 3, on 'The Doctor in Court'

OKLAHOMA

Society News—Dr Edward A Abernathy, Altus, among others addressed the Western Oklahoma Medical Society, September 19 on 'Acute and Suppurative Otitis Media and Its Complication'—The Grayson County (Texas) Medical Society held a joint meeting with the Marshall County Medical Society at Durant, September 12 speakers included Drs David C Enloe and Arthur Gleckler, Sherman, Texas, on 'Treatment of Empyema' and 'Treatment of Mental Cases in the Home,' respectively—Drs Carroll M Pounders and William M Taylor, Oklahoma City addressed the quarterly meeting of the Canadian County Medical Society, El Reno, September 18 on 'The Child Who Is Susceptible to Colds' and 'Nutritional Disturbances in Early Life,' respectively Physicians of Blaine, Custer and Kingfisher counties were guests at the meeting

PENNSYLVANIA

Society News—Dr Howard K Petry, Torrence, spoke on mental health before the Fayette County Medical Society, October 5, in Uniontown Drs Roy R Snowden and Waid E Carson, Pittsburgh, addressed the society, September 7, on 'Recent Advances in Knowledge of Nephritis' and 'Changes in the Eye in Diseases of the Kidneys,' respectively, and Dr Jean V Cooke St Louis, discussed the encephalitis epidemic—Dr Oliver H Perry Pepper Philadelphia addressed the Berks County Medical Society, Reading September 12 on blood dyscrasias—Dr Damon B Pfeiffer, Philadelphia, addressed the Lehigh County Medical Society, Allentown, September 12 on 'Cancer of the Intestines, Rectum and Colon'

Philadelphia

Society News—The first autumn program of the Philadelphia County Medical Society, October 11, was devoted to mental hygiene, Dr Charles W Burr gave an address on 'What Is a Good Environment?' and Dr Edward A Strecker, Mental Hygiene and the General Practitioner—Speakers at the first meeting of the Philadelphia Academy of Surgery, October 2 were Drs Charles H Frazier and William H M Erb on 'The Superior Laryngeal Nerve and the Superior Pole in the Thyroidectomies' and Maxwell Cherner 'Etiology of Indirect Lingual Hernia'—A symposium on prenatal care was presented before the Obstetrical Society of Philadelphia October 5 by Drs Robert M Shirey Edward A Schumann Joseph V Missett, Jr, Frances S Dunne and Samuel M Stern

TENNESSEE

Personal—Dr Ross L Gauld, Johnson City has been appointed health officer of Maury County to succeed Dr Hainan C Busby, Columbia, who has gone to Johns Hopkins University for a year's study of public health under an award from the Rockefeller Foundation—Dr Waller S Leathers Nashville was elected chairman of the new state public health council at its first meeting in Nashville, September 15—Employees of the Davidson County Isolation Hospital entertained Dr William W Core superintendent of the institution for thirty-three years at a dinner September 16 in honor of his seventy-fourth birthday

Society News—Dr Daniel R. Thomas, Calderwood, addressed the Blount County Medical Society, Maryville, October 5, on causes and treatment of asthma. Dr Kuebel A. Bryant spoke on first aid in ophthalmic injuries.—Dr Jack Witherspoon addressed the Nashville Academy of Medicine at its opening session of the fall, September 5, on "Hemorrhage and Diverticulitis of the Colon." Dr Lucius E. Burch spoke, October 2, on cancer of the cervix and uterus.—Dr Giles A. Coors, Memphis, among others, addressed the medical society of Dyer, Lake and Crockett counties September 6, on surgical mortality.—Dr William D. Haggard, Nashville, spoke on goiter at a meeting of the Gibson County Medical Society, Trenton, August 28.—Dr Edwin H. Magee, Chattanooga, was the speaker at a meeting of the Hamilton County Medical Society, Chattanooga, October 5, on "Complications of Cervical and Perineal Lacerations."—Dr Robert C. Anderson, Johnson City, among others, addressed the Washington County Medical Society, October 5, on granuloma inguinale.

VIRGINIA

Health at Richmond—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended September 30 indicated that the highest mortality rate (168) appeared for Richmond and the rate for the group of cities, 10. The mortality rate for Richmond for the corresponding week of 1932 was 116 and for the group of cities, 9.4. The annual rate for eighty-five cities for the thirty-nine weeks of 1933 was 10.9 as against a rate of 11.2 for the corresponding period of last year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

WEST VIRGINIA

Personal—Dr Chesney M. Ramage, Fairmont, has been appointed superintendent of Fairmont Emergency Hospital succeeding Dr William A. Welton.—Dr Reece M. Pedicord has been appointed health officer of Wheeling and Ohio County, succeeding Dr William H. McLain.

Society News—The Fayette County Medical Society entertained medical societies of adjacent counties at the Oak Hill Country Club, September 12 with a golf tournament in the afternoon followed by dinner and a scientific meeting. Dr Thomas W. Murrell, Richmond, Va., presented a paper on dermatology and syphilology.—The Hospital Association of West Virginia held its eighth annual meeting in Clarksburg, October 3.—Dr Maxwell E. Lapham, Philadelphia, who has been conducting extension courses in obstetrics in Virginia for several months, addressed the Mercer County Medical Society, Bluefield, September 8 on operative obstetrics.—Dr Sylvester J. Goodman, Columbus, Ohio, addressed the Monongalia County Medical Society, Morgantown, August 1, on "Treatment of Postpartum Hemorrhage and Progress of Obstetrics."—Dr Robert T. Miller, Jr., Baltimore, addressed the Ohio County Medical Society, Wheeling, October 6, on surgical treatment of pulmonary tuberculosis.

GENERAL

Neurologic Congress—At a preliminary conference in London, September 7, to arrange for the second International Neurological Congress, to be held there in August, 1935. Sir Charles S. Sherrington, Oxford, England, was elected president. Dr Bernard Sachs, New York, honorary president, and Dr Gordon M. Holmes, London, England, acting president.

Society News—Dr W. Wayne Babcock, Philadelphia, was installed as president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at its recent annual meeting, and Dr Marvin P. Rucker, Richmond, Va., was chosen president-elect. Dr Magnus A. Tate, Cincinnati, was reelected secretary. The next annual session will be held, Sept. 8-10, 1934.

International Conference on Tuberculosis—The next conference of the International Union Against Tuberculosis will be held in Warsaw, Poland, Sept. 4-6, 1934. Subjects selected for discussion are: (1) biologic variations of the tubercle bacillus, (2) the various forms of osteo-articular tuberculosis and their treatment, and (3) utilization of dispensaries for the treatment of tuberculous patients. The National Tuberculosis Association, 450 Seventh Avenue, New York, is arranging a special party for the Warsaw meeting. Those who wish to

travel with the group may obtain further information from the association.

Health in the Byrd Expedition—Members of Admiral Richard E. Byrd's second expedition to the antarctic region, which was to set out from Boston, September 25, all received thorough physical examinations under the direction of Dr Joel E. Goldthwait, Boston, and Dr Guy O. Shirey, recently of Tucson, Ariz., surgeon of the expedition. Members of the first expedition in 1928 were examined in New York and complete physical records were placed on file with the surgeon of the expedition, including blood grouping in case transfusion were necessary in an emergency. The expedition returned without the loss of a man. Fourteen men who went on the first trip have been selected for the second.

Awards of Merit—The American Congress of Physical Therapy has presented awards of merit for 1933 to the following:

Dr Claudius Regaud, associate director, Curie Institute, Paris, for meritorious work with radium.

Dr Walter J. Turrell, University of Oxford, for merit in physical medicine.

Dr Harvey Cushing, Sterling professor of neurology, Yale University School of Medicine, New Haven, for merit in developing electrosurgery.

Dr Gustavus M. Blech, Chicago, for pioneer literary work in physical medicine.

Dr Gustav Bucky, New York, for merit in radiology.

Dr William L. Clark, Philadelphia, was named president elect of the congress and Dr Albert F. Tyler, Omaha, was installed as president. Other officers elected were Drs John S. Hibben, Pasadena, Calif.; William Bierman, New York; Frederick L. Wahrer, Marshalltown, Iowa; and Walter P. Grimes, Kansas City, Mo., all vice presidents, Nathan H. Palmer, New Orleans, secretary, and John S. Coulter, Chicago, treasurer, reelected. The 1934 session will be in Philadelphia.

Death Rate Lowest on Record—The general death rate for continental United States for 1932 was 10.9 per thousand of estimated population, the lowest rate ever recorded since the collection of mortality statistics was begun in 1900. The rate is based on reports from the U. S. Death Registration Area (exclusive of Utah) which is estimated to represent 96.3 per cent of the population of the United States. The Bureau of the Census has issued comparative figures for the years 1930-1932 showing the death rates from individual causes. In eighteen groups of causes into which the table is divided, thirteen groups showed decreases in the total number of deaths, three showed increases and two remained about the same. Groups in which large increases occurred were cancer and other malignant tumors and diseases of the circulatory system. In 1932 there were 255,802 deaths from cancer of the stomach and duodenum, 14,871 from cancer of the uterus, 11,863 from cancer of the breast and 10,420 from cancer of the liver and biliary passages. Deaths from diseases of the circulatory system increased numerically from 280,403 in 1930 to 294,596 in 1932. A noteworthy decrease was in tuberculosis, which caused 9,000 fewer deaths in 1932 than in 1930, a decrease in rate from 71.7 to 63.

Society Elections—Drs Eben J. Carey, dean, Marquette University School of Medicine, Milwaukee, and Chevalier Jackson, professor of bronchoscopy and esophagoscopy, Temple University School of Medicine, Philadelphia, were awarded the annual gold medals for research of the Radiological Society of North America, September 29. The award to Dr Carey was in recognition of his x-ray study of bone growth and to Dr Jackson for his work in removing foreign bodies from the trachea and lungs with the aid of the x-rays. Dr Carey is director of medical exhibits at A Century of Progress. New officers of the organizations making up the first American Congress of Radiology in Chicago, September 25-30, are as follows:

RADIOLOGICAL SOCIETY OF NORTH AMERICA

President: Dr W. Herbert McGuffin, Calgary, Canada.
President Elect: Dr Lloyd Bryan, San Francisco.
Secretary: Dr Donald S. Childs, Syracuse, reelected.

AMERICAN ROENTGEN RAY SOCIETY

President: Dr John T. Murphy, Toledo.
President Elect: Dr George W. Grier, Pittsburgh.
Secretary: Dr Eugene P. Pendergrass, Philadelphia, reelected.

AMERICAN RADIUM SOCIETY

President: Dr Rollin H. Stevens, Detroit.
President Elect: Dr William H. Cameron, New York.
Secretary: Dr Edward H. Skinner, Kansas City, Mo., reelected.

AMERICAN COLLEGE OF RADIOLOGY

President: Dr Henry K. Pancoast, Philadelphia.
President Elect: Dr Thomas A. Groover, Washington, D. C.
Secretary: Dr Benjamin H. Orndoff, Chicago, reelected.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept 23, 1933

The Number of Physicians in Great Britain

In a review of the numerical strength of the medical profession, the *British Medical Journal* gives figures showing a steady increase of the proportion of physicians to the population in the last fifty years. The following are the numbers at decennial intervals

Year	Physicians on Register	Population of British Isles
1881	23 275	30 241 482
1891	29,555	38 104 975
1901	36 912	41 976 827
1911	40 913	45 340 030
1921	45 408	47 146 566
1931	55 604	48 989 485

These figures show that while the number of physicians in 1921 was nearly double that in 1881, the population had increased only 34 per cent. During the last ten years the number of physicians has increased by 10 000 while the population has increased by much less than 2,000 000. Making allowance for the large number of registered physicians living abroad and for those no longer in practice, the proportion of physicians to population is more than one to every thousand. In the United States it is estimated that there is one to every 800, in Austria, one to 900. In Switzerland one to 1,250, in Germany, one to 1 345. In Denmark one to 1,430, in France, one to 1,510. In Holland, one to 1,820. In Czechoslovakia, one to 1,970, and in Sweden one to 12,860.

The German Persecution of Physicians

The number of Jewish physicians who have sought refuge in this country from the German persecution has been exaggerated by certain journals desiring to raise a scare about British jobs being endangered at this time of depression. It is officially stated by a subcommittee of the Jewish Medical and Dental Emergency Association that the number of German physicians and dentists who have so far registered with the committee does not exceed 180 and that only about eighty to a hundred of them are endeavoring to obtain a British qualification. Of these, thirty-five have been placed at Edinburgh and three or four have been admitted to most of the medical schools in Great Britain and northern Ireland. As pointed out in a previous letter the persecution is not confined to the Jews but is directed against all persons who show pacifist or liberal opinions. But the physicians who have sought refuge in this country appear to be all Jews. The opposition which has arisen on a limited scale in certain quarters disclaims any intention to obstruct the admission of Jewish research workers and leading specialists or of physicians in limited numbers. In the case of scientists, no opposition of any kind has been manifested. Six German Jewish professors have been appointed to two years research fellowships in history, economics, physics, psychology and physiology at Manchester University. Four German specialists including a physician a gynecologist and a bacteriologist have accepted posts at the Victoria Jewish Hospital Manchester. Last June Michael Polanyi the Hungarian physical chemist who resigned his Berlin professorship as a protest against Nazi treatment of Jewish professors was appointed to the chair of physical chemistry in the University of Manchester. The formation of the Academic Assistance Council under the presidency of Lord Rutherford to assist

refugee scientists has been described in a previous letter. The council has raised \$50,000 by voluntary subscription and is aiming at raising \$200,000. It has allotted \$1,000 a year each to fifty refugee scientists.

Poisonous Metallic Dusts

An investigation by two chemists, Dr T J Dunn and Mr H C L Bloxham, of the unexplained deaths of cattle who grazed in different parts of the county Durham has shown how the atmosphere can be polluted by the emanations from coke ovens, which were found to be in proximity in all cases. The pasturage in the neighborhood was found to contain lead. In the stomach and intestine of one of four bullocks that had died unexpectedly lead, copper and manganese were found. The owner of a farm near the coke ovens had lost thirty animals, while others which were moved to other pastures on becoming ill, recovered. Nothing was found in the water to explain the death of the animals but in the grass lead and copper were found to the extent of 14 and 47 parts per million respectively. The internal organs of the animals contained lead in the following proportions per million: stomach tissue, 0.6; kidneys, 17; liver, 2.6. These organs also contained respectively, 3.2, 2.1 and 3.5 parts per million of copper. The source of these metals seems to be the pyrites in coal, which may contain lead in proportions varying from 20 to 54 parts per million.

Dunn and Bloxham have also drawn attention to the prevalence of metallic dusts in the air of manufacturing towns, as a result of the combustion of coal both in houses and in furnaces. Analyses of various kinds of coal and of domestic and industrial soots revealed lead varying from 5 to 461 parts per million. The various kinds of dusts deposited in different open areas of Newcastle and on shelves of houses, porticoes and the entrances to public buildings revealed lead to the extent of 3,000 parts per million, copper 1,600, zinc 4,700 and arsenic 400. Also, while the pasturage of purely rural districts was found to be free from lead, it was found in vegetation growing along roads where there was much automobile traffic. This was attributed to the tetra-ethyl lead present in some gasoline.

The Decline of Vaccination

The decline of vaccination, following the practical abolition of compulsion (by allowing a conscientious objection of the parent to vaccination to secure exemption) is causing concern to the public health authorities. The official figures show that only 39 per cent of the children born in 1931 (the last year for which statistics are available) were vaccinated compared to 75 per cent in 1905. The following shows the downward trend in the last five years.

Year	Percentage Vaccinated	Percentage of Conscientious Objections
1927	41.2	41.2
1928	42.6	42.5
1929	50.9	44.7
1930	40.1	47.6
1931	39.0	46.7

The Spread of Typhoid by Unrecognized Cases

In recent years typhoid has greatly diminished in this country as a consequence of improved hygiene. The sporadic cases and the occasional outbreaks that still occur are attributed mainly to typhoid carriers. In the *Glasgow Medical Journal*, Dr C M Smith has described important work done by the public health department of Glasgow in connection with typhoid. In the last eight years 800 cases of verified typhoid occurred in Glasgow and 1 608 contacts were examined bacteriologically in order to ascertain whether they were carriers. Of these, fifty-eight proved to be carriers and fell into three groups:

fourteen chronic carriers, ten temporary carriers and thirty-four recent "missed" cases (contacts who had recently an illness which might have been a very mild attack of typhoid). The conclusion is drawn that these cases, which considerably outnumber the carriers, now play a larger part than the latter in the spread of typhoid in Glasgow. The chronic carriers, the number of whom may be underestimated, were found to be responsible for only twenty cases. During the eight years, only one case could be attributed to the cases of typhoid treated in hospitals. The 800 cases were made up of 529 sporadic cases and 271 that occurred in outbreaks, of which the largest was one of sixty-two cases of paratyphoid B in 1927. The origin of the sporadic cases frequently could not be traced. In Glasgow carriers are prohibited from engaging in any occupation with food. It is held that the only efficient treatment of the carrier is excision of the gallbladder, but this operation is almost always declined.

PARIS

(From Our Regular Correspondent)

Aug. 30, 1933

The Sanatorium and the Campaign Against Tuberculosis

For several sessions the Academy has been the scene of a discussion between several of its eminent members on the place of sanatoriums in the organization of the crusade against tuberculosis. The discussion was precipitated by Professor Sergent, who complained that the sanatorium in the treatment of tuberculosis is being belittled. A number of these institutions have been created, and others are being proposed. This represents an enormous expenditure of money. In the meantime public opinion is developing to the effect that the progress made in the treatment of tuberculosis with pneumothorax, phrenicectomy, apicolysis and aurotherapy render the stay in a sanatorium useless so that patients might just as well be treated at home under the supervision of experienced physicians. What Mr. Sergent did not say is that sanatorium treatment, unless the patient is indigent and is treated gratuitously, is exceedingly expensive. A Paris physician, who has a son in a sanatorium, expends, owing to pneumothorax treatment with repeated insufflations and continual radiographic examinations, an annual sum exceeding 40,000 francs, and this in spite of the fact that he has the benefit of reduced rates. At present the sanatorium is available only to the indigent, whose expenses are paid by the government, and to millionaires. This is the reason why middle class patients avoid the sanatorium, to which may be added an unwillingness to live, for years, a life of idleness away from their families. Family physicians are inclined to encourage these sentiments. Mr. Sergent was the first to protest against the abandonment of sanatorium treatment, which in his opinion, has no substitute, as it combines the essential conditions on which is based the logical treatment of tuberculosis: isolation, pure air, absolute rest, constant medical supervision and training of the patient in a mode of living that he must henceforth follow. The new forms of treatment give much better results when they are applied by competent persons in the atmosphere of the sanatorium. Mr. Rist agreed that sanatorium treatment should remain the basis of the general treatment of tuberculosis. The necessary physical and mental rest is impossible to secure at home, and among the masses the tuberculosis person does not always find in his family the encouragement needed as the family frequently does not understand the gravity of the situation. The educative role of the sanatorium must not be forgotten. The patient learns here how to take care of himself. By making admission to sanatoriums easier one combats the baneful influence of treatment by charlatans. Mr. Hayem thought that some directors of

sanatoriums do not take sufficient account of digestive disorders, so frequent in tuberculous persons. Forced feeding is not suitable for all patients. Overweight, contrary to current opinion, is not a sure sign of improvement in tuberculous persons. Mr. Leon Bernard emphasized that it is important to oppose public opinion that undermines the sanatorium for reasons of personal convenience. Mr. Bezançon, in agreement with Mr. Sergent, ascribed first place to the sanatorium in the crusade against tuberculosis. He opposed, however, the idea that all a tuberculous person needs is to consent to a protracted stay in a sanatorium and that recovery outside of a sanatorium is impossible. He suggested a modification of that idea. The sanatorium should admit not merely patients in the beginning stage, who present simple congestion and are not contagious but also acute febrile types. It is the type of expensive sanatorium, whose benefits are too transitory, to which Mr. Bezançon had declared he preferred active treatment in the specialized urban hospital. Hence the misunderstanding that arose. The new idea is to create therapeutic centers of two types: an urban type for diagnosis, the selection of patients, and the preparation for and the institution of ambulant pneumothorax, and an extra-urban type corresponding in a general way to the sanatoriums of former days. Mr. Bezançon pointed out that, to prevent the urban therapeutic centers from becoming overcrowded, it is desirable that a greater number of patients be deflected toward the sanatorium. If more urban centers for treatment of the tuberculous are to be created, there should be an increase in the number of sanatoriums, in order that the present spectacle of patients being compelled to wait months before securing admission may cease. Bezançon emphasized that the crusade against tuberculosis is, to a great extent, identical with the promotion of general hygiene.

ITALY

(From Our Regular Correspondent)

Aug. 15, 1933

Lectures in Military Hospitals

Through the initiative of the general management of the army medical corps, a series of lectures by university professors is being organized in the military hospitals. As the Milan Military Hospital Prof. Carlo Foa, director of the Physiologic Institute at the University of Milan delivered a lecture on the "Metabolism of Calcium in Disorders of the Skeleton." The speaker said that calcium is present in every cell of the animal organism and is needed for the life and the functioning of every tissue. The normal source of calcium is the food, but absorption by this route does not take place readily and a large part of the calcium in the food is eliminated with the feces. The calcium-phosphorus quotient in the diet is important. The optimal value is 1.3 as in human milk. The bile in which calcium is soluble, plays an important part in the exchange of calcium. The subcutaneous or intramuscular injection of the parathyroid hormone increases the concentration of calcium in the blood serum. Such increase is gradual and attains the maximum (occasionally 18 mg. per hundred cubic centimeters) in from twelve to eighteen hours. The skeleton can take on or yield up calcium according to the needs of the body, for the mineral constituents of the bones undergo a continuous change. Professor Foa described the various forms of parathyroid osteosis: ankylosing polyarthritis due to hyperfunctioning of the parathyroids, Paget's disease and Recklinghausen's disease. In some cases of osteomalacia there might be a diagnosis of hyperparathyroidism, and operations on the parathyroids would in that case be justified.

In the military hospital at Messina, Professor Izar, director of the Clinica Medica at the University of Messina, lectured on Amebiasis. The port of entry of the parasite is always

oral, indirect contagion is possibly the most common. The liver is the most frequent seat of metastasis. The ameba reaches the liver by the portal route and may produce various clinical forms of hepatitis and also abscess. The treatment of amebiasis rests largely on emetine, combined with arsenical preparations and purgatives, and possibly hepatocentesis.

Research on Lysocytin and on Nerve Regeneration

The Academy of Medicine of Turin met recently under the chairmanship of Professor Vanzetti. Belfanti presented a paper on the disintegration of lecithins. The enzymes present in snake venom may transform lecithin into a highly toxic substance, which hemolyzes red corpuscles and is termed "lysocytin." Lysocytin has been isolated from some organs of certain mammals, particularly from the pancreas of the horse, this transitory terminal substance is then transformed into nontoxic phosphatides. Belfanti has succeeded in isolating lecithinase from the pancreas of the horse, it is on lecithinase that the function of transforming lecithin into lysocytin depends. Japanese investigators assert that they have found lysocytin in polished rice and that it is identical with the defective diet toxin that is thought to be the cause of beriberi. The speaker demonstrated, in agreement with Contardi that the belief in the action of lecithin as the cause of beriberi is erroneous.

Goria suggested a device for maintaining the course of tertian malaria in inoculation malaria. The device consists in taking the blood during the period of apyrexia, defibrinating it, adding mercury cyanide, and injecting the plasma intravenously. With this procedure malarial inoculation becomes practicable even in patients with weak resistance, and one avoids the dangers due to the development of daily febrile attacks or too violent attacks of fever.

Dagliotti reported experiments in which he divided the sciatic nerve of dogs at the hip and then separated the fibers of the central stump and sutured only a small part of them to the peripheral stump. A few months later by means of laminectomy, he destroyed the sensory fibers and removed the six larger spinal ganglions on the side previously operated on. After from eighteen to twenty-one months the dogs were killed and it was found that in them function was perfect. The muscles of the two limbs had acquired an almost identical weight. The nerve fibers were counted at various heights, and it was observed that from a central stump containing 2,000 myelomic, almost exclusively motor fibers about 4,000 fibers had been regenerated which were distributed in a homogeneous manner among all the fasciculi of the peripheral stump. The histologic preparations of the muscles revealed a greater volume of the fibers of the muscles on the side operated on but there were fewer of them. According to the author these results may justify attempts to bring about a numerical increase of the nerve fibers that survive in forms of partial paralysis of a nerve, by means of simple transversal neurotomy of that nerve and precise apposition and suture of the stumps. This intervention, suggested by Purpura in October 1931 had been performed by the speaker a few months previously, in a child with severe paralysis of the lower limbs due to an attack of poliomyelitis eight years previously. Three years has now elapsed since the intervention and some improvement may be noted.

The Sanitary Condition of the Army

The Direzione generale di sanità militare has published a report on the sanitary condition of the army in 1929 which reveals that the morbidity which in 1928 was 573 per thousand declined in 1929 to 546. The mortality was 31 per thousand of the average number enlisted which marked a decline over previous years. The average number of hospital patients per thousand effectives was 20.9. Considered by organization the

greatest morbidity was found among the newly enlisted infantry and the least morbidity among the seasoned infantry. The morbidity was highest in the month of July and the lowest during the last three months of the year. The most frequent disorders with which the troops were affected were conditions of general malaise (2449 per thousand patients), infectious fevers of short duration, and muscular rheumatism. Of the average force present, 19 per thousand came down with typhoid or paratyphoid infection, resulting in a case mortality of 16 per cent. The cases of undulant fever amounted to 0.1 per cent of the average force, with no deaths, there were no cases of smallpox, there were 4.2 per thousand cases of measles, with a mortality of 0.3 per cent. The cases of scarlet fever amounted to 0.2 per thousand, with a mortality of 3.6 per cent. Influenza presented a morbidity of 12.3 per thousand, with a mortality of 0.07 per thousand. One infantryman was attacked by leprosy. The cases of venereal disease treated in the military sanitary institutions amounted to 25.8 per thousand of the average force while the cases of malaria detected were 7 per thousand, and the cases of acute articular rheumatism were 4.1 per thousand. Tuberculosis developed in 2.7 per thousand troops. Of the cases of tuberculosis diagnosed, 52.4 per cent concerned the respiratory apparatus, and 47.6 per cent other organs. Of the men admitted to institutional care for tuberculosis, 23.7 per cent died. In all the military hospitals taken together, 8,058 operative interventions were performed.

Aiding Orphans of Physicians

Under the chairmanship of Generale Medico Della Valle, a meeting was held recently of the committee for the aid of orphans of physicians who died during their war service. The chairman stated that the work will continue and will not be completed until 1942. Up to the present time, sixty-five orphans have been aided, forty-eight of whom have been granted funds with which to pursue their studies.

BELGRADE

(From Our Regular Correspondent)

Sept 13, 1933

Syndicate of Physicians

Although there are not too many physicians in Yugoslavia, their situation has become difficult since the World War. This is due not only to the bad economic conditions in the country but also to a vigorous effort to socialize medicine since 1925. A number of public health institutions have been opened, unfortunately these institutions do not only preventive and diagnostic work but also curative work free especially for the treatment of venereal and infectious diseases. Imitating the state many private institutions and associations have taken physicians into their service for a minimal monthly pay such as social insurance, railway companies, miners and maritime companies. The state physicians are the only ones who have an assured income and a pension after thirty five years of active service. Besides they are allowed to have private appointments in any of the institutions mentioned where they work after their regular service hours. As all the positions in the state services are taken, newly qualified young physicians are obliged to begin as private practitioners so that the number of private physicians is constantly increasing and their earnings are diminishing. In such a situation they finally decided to create a syndicate although the official chamber of physicians has already been in existence for ten years. The chamber of physicians is only an administrative representation of all physicians of the country. In reality the interests of private physicians and of state physicians are rather opposed and that is why the former decided to unite in a syndicate.

The aim of the syndicate is to protect the interests of its members by determining minimal fees by just distribution of

appointments, by aiding its members in the case of sickness or unemployment, by controlling medical competition, and by diminishing unemployment among physicians. The syndicate will survey medical ethics and will judge and pass resolutions in the case of breach of medical ethics of its members. The syndicate will combat chiropody and try to prevent such practice. Every salaried service will be regulated through the syndicate. Every member has to pay an annual subscription for membership and a monthly subscription for the sickness fund. During unemployment or during sickness, the members do not pay their subscription if the unemployment lasts more than six months. Each member will receive a subsidy during unemployment or sickness if it lasts more than ten days. If a member is called before the court for professional delinquency he will also receive this subsidy. In case of death of a member, his family receives compensation; this compensation is given for members over 40 years of age if they have been members for a period of fifteen years, for younger members ten years of membership gives the right to claim the same compensation.

The Number of Physicians in Yugoslavia

There are 4,951 physicians for a population of 14,170,000, that is, one physician for 2,862 inhabitants. There is an uneven distribution of physicians in Yugoslavia. The cities have 4,059 physicians, whereas the villages have only 812. Belgrade has 768 physicians, or one for 325 inhabitants. A similar ratio exists for nearly all cities. Living conditions in the villages are not so good and the earnings are insignificant. There are 1,299 physicians as state officials, including 402 for curative medicine in districts, 477 in hospitals and 420 for preventive medicine. In social insurance institutions there are 1,409 physicians. This means that there are 2,708 physicians with permanent pay and an assured pension and 2,243 working as private practitioners. While there are not too many physicians in the country their situation is becoming worse every day because the population cannot afford to pay private physicians and are going to university clinics and other state institutions where examination and treatment are given free of charge. Actually, according to general health conditions of the population, a larger number of physicians is required.

Infectious Diseases During 1932

There was nearly the same number of infectious diseases during 1932 as during 1931. The eleven diseases most widespread in the country are typhoid and paratyphoid fever, typhus fever, dysentery, scarlet fever, measles, diphtheria, cerebrospinal meningitis, tetanus, anthrax and acute poliomyelitis. Of these eleven diseases, in 1932 there were 248 cases for each 100,000 inhabitants and in 1931 a little more, 255.

The mortality from these eleven diseases was 9.29 per cent in 1932 and 9.32 per cent in 1931. In 1932 diphtheria and croup took first place with 10,158 cases and 1,208 deaths and measles had the second place with 6,956 cases and 106 deaths. There were 6,908 cases of typhoid, with 746 deaths. 4,383 cases of scarlet fever, with 296 deaths and 2,656 cases of bacillary dysentery, with 302 deaths. There were only 122 cases of cerebrospinal meningitis, with 56 deaths, or a mortality of nearly 46 per cent.

Professor Blumenthal Comes to Belgrade

Invited by the faculty of medicine in Belgrade, Prof. Dr. Blumenthal of Berlin has come to Belgrade having accepted the appointment as professor. He came with his assistant Dr. Jacob. Professor Blumenthal has taught in Berlin since 1905. He has devoted his life to the study of cancer. In 1917 he was appointed director of the institute for cancer research in Berlin and general secretary of the German Society for Cancer. He has written two well known books, "Chemical

Processes in Cancer" and "The Results of the Experiments with Cancer." Professor Blumenthal will continue in Belgrade his experimental work on cancer in the Institute of Pathology, brilliantly equipped by the late Prof. Georges Joannovic. As soon as he comes back from the international congress on cancer in Madrid he will begin teaching.

VIENNA

(From Our Regular Correspondent)

Aug. 31, 1933

The Fate of the Hajek Clinic

There are probably few American physicians who studied in Vienna without having visited Professor Hajek's rhinolaryngologic clinic, which had an excellent international reputation. In July of this year, after completion of his honorary year, Hajek bade farewell to his clinic. The laws of Austria require every clinical teacher to give up teaching on reaching his seventieth birthday. By exception, he may be granted an 'honorary year,' on completion of which he must, however, resign. Professor Hajek, as stated, had completed his honorary year, and the farewell celebration held in July was an ovation in evidence of the esteem in which the scientist was held by all who knew him. Representatives of all the scientific bodies participated in the farewell ceremonies. Unfortunately, it has recently been announced by the authorities that the Hajek clinic is to be discontinued and that only the otologic clinic will be retained and will take over the work of the Hajek clinic in rhinolaryngology, in which instruction by first-class specialists will continue to be given. The old controversy as to whether otology should constitute a specialty distinct from rhinolaryngology or whether they should be united, has been decided here in favor of their union. It remains to be seen whether the former conception offered better possibilities from the scientific and theoretical points of view. The friendly rivalry of the two clinics existing in Vienna proved advantageous to the medical profession for the two clinics were thus forced to do their best. Financial considerations were of such moment to the government that it was induced to discontinue a clinic that had a well organized staff and equipment and attracted many foreign students. The clinic, which was founded more than fifty years ago by the old masters of laryngology (Türk and Schrotter), and whose traditions exerted a remarkable influence, will probably turn over its quarters to a surgical clinic, although no final announcement as to their disposition has as yet been made.

Austrian Law on Sterilization of Males

In connection with a complaint brought against three physicians and their aids, who, during last year, had sterilized a large number of men by means of vasoligation and vasectomy, the supreme court decided the question as to whether such an intervention can be judged according to Austrian law, as a grave bodily injury and punished accordingly. The accused were all acquitted, on the ground that the law still in force did not justify the imposition of a sentence. The present law covers only an 'incurable' permanent injury caused by operation. At the trial, experts testified that by means of another operation the sterilization might be eliminated. Thus the physicians could not be punished for a 'permanent and incurable' injury to health. The law demands also evidence of "an unfriendly purpose" or "a design to maltreat" the person injured, on the part of the accused, and that evidence is not available if the patients have accepted the operation of their own free will. Moreover, no injurious effects of the operation have been demonstrated in a single case. It was found to be impossible to convict the accused on the basis of the paragraph of the Austrian law prohibiting charlatanism. "Charlatanism" is defined in Austria as 'unauthorized' treatment, that is to say,

by persons who, neither by virtue of their studies nor by reason of permission granted by the authorities, have the right to render medical aid to patients. The court held that the penal code now in force precludes legal prosecution for the performance of sterilization. The law shows here a defect and new legislation is an urgent need.

The New Austrian Ethical Code

The government recently submitted, for criticism, to representatives of the medical profession of the republic, the draft of a new ethical code and council of physicians and requested a prompt return of the opinion of the profession in regard to the draft, which may be enacted into law this year. The draft undertakes, for the first time in Austria, to define medical activities the exercise of which is expressly reserved to legally qualified persons. Furthermore the requirements for the practice of medicine are stated, and provisions for the revocation of the right to practice are established. The following provision is entirely new. So long as the studies and the examinations prescribed for the attaining of a doctor's degree in medicine do not provide for practical training for newly graduated physicians, such a course of training for the physician extending over at least one year, at the bedside of patients, after obtaining a doctor's degree, must be evidenced by acceptable certificate before such a physician can begin to practice. The draft recognizes furthermore the principle that the license to practice is not bestowed by a board but results automatically as soon as the requirements (studies and examinations) have been met. Confirmation, by authorities of the license serves only the purpose of general control, in order to prevent unauthorized persons from practicing. The authorities as in the past, will not be permitted to interfere with the professional activities of physicians. Only in exceptional cases (for instance, sudden onset of mental disease in a physician), which might endanger public welfare, can the authorities intervene or forbid the activities of the physician. A permanent prohibition to practice will, however, require a judicial investigation in cooperation with the chamber of physicians. The protection of physicians against damage to their profession is strengthened by the fact that the title "physician" or "doctor of medicine" is legally protected. Migratory practice—practicing simultaneously in two or more different communities or in two or more different places of the same community—is absolutely prohibited. Likewise, the title of "specialist" is legally restricted. The disciplinary powers of the council on medical ethics, which is to be appointed by the chamber of physicians are strengthened. As compared with previous provisions, much heavier fines for offenses against the tenets of medical ethics are impossible. More particularly, the draft of the proposed legislation provides that in grave offenses, the council on medical ethics may deprive the guilty physician of the right to practice. Such a decision may on appeal be reversed by the ministry of public health. Medical circles are protesting against this provision of the draft which would enable a physician's colleagues to impose on him what would amount to a death sentence. It may be assumed that the universal rejection of this particular paragraph will induce the government to strike it out. The proposed law provides that for the practice of medicine in Austria the following conditions must be met: (1) citizenship of Austria, (2) a diploma granted by a faculty of medicine in Austria or a similar diploma bestowed by a foreign country and approved by competent authorities in Austria, (3) practical training for at least one year in a hospital after attaining of the diploma of doctor of medicine and (4) attainment of full legal age which in Austria is 24 years. An interesting provision of the projected law is that a physician who practices medicine shall pursue no other occupation that is inconsistent with the dignity and honor of the medical pro-

fession. No physician may refuse to give necessary first aid unless he has a convincing reason for such refusal. Nor may a physician who has been elected a member of the chamber of physicians (the legal representative body of the medical profession) refuse to serve in such a capacity unless he can present acceptable reasons. Another provision is an effort to check the entrance of undue numbers to the medical profession. The admission of physicians to service in the *Krankenkassen* is to be regulated in such a manner that only such physicians will be accepted as have had at least two years of hospital experience and have been for at least ten years citizens of Austria.

Mortality from Tuberculosis in Vienna

The Statistical Yearbook of the city of Vienna for 1932 states that the number of persons who died in 1931 from all forms of tuberculosis was 3,158 whereas the number in 1932 was reduced to 2,804. The mortality of tuberculosis was 19 per 10,000 of population during the five-year period 1926-1930, 17 in 1931, and only 15 in 1932. This marked decrease is doubtless due to the excellent housing facilities in Vienna. The municipality of Vienna has erected 30,000 dwellings (about 10 per cent of the total number in Vienna), all of which are constructed in accordance with modern, hygienic principles. These dwellings have been placed at the disposal of the poorer strata of the population at a low rent. This generous housing policy of the municipality has thus discovered the most effective means of combating the tuberculosis morbidity and also the tuberculosis mortality.

Marriages

THOMAS ENGLISH McGEACHY, Decatur, Ga., to Miss Frances Josephine Fletcher of Winston-Salem, N. C., August 2.

OSCAR DAVID GARVIN, JR., Ridge Spring, S. C., to Miss Evelyn Margaret Williamson of Columbia, in August.

EDWARD BRUCE MEWBORNE, Lawrenceville, N. J., to Miss John Zennie Akridge of Thomasville, Ga., June 24.

JOSEPH CHARLES TATUM, Ancon, Canal Zone, to Miss Evelyn Katherine Locher of Memphis, Tenn., August 4.

WILLIAM LAWRENCE MATTISON, Calvin, Okla., to Miss Lois Juanita Martindale of Nashville, Ark., June 26.

BERNARD PATMOS, Adrian, Mich., to Miss Frances Elisabeth Hyde of Evanston, Ill., September 30.

OSCAR HENRY HANSON, Cambridge, Wis., to Miss Helen Jean Young of Fort Atkinson, August 16.

THOMAS HENRY BLAKE, Sheffield, Ala., to Miss Laura Lee Peaster of Thornton, Miss., August 2.

DEWITT TALMADGE MILAM, Monroe, La., to Miss Mary Lee Beckett of Shreveport, August 1.

SIGMA VAN LEWIS, Middlesex, N. C., to Miss Ola Elizabeth Caudle of Randleman, August 5.

HENRY PARDEE CARR, Milledgeville, Ga., to Miss Marion Corrigan of Atlanta, August 23.

EDWARD DOTY DAKE, Rome, N. Y., to Miss Muriel Doris Stretton of Syracuse, April 19.

OLIVER W. JENKINS to Miss Mary Ellen Bailey, both of Chattahoochee, Fla., July 30.

WILLIAM F. MYERS, Coal Valley, Ill., to Miss La Verne Madison of Moline, June 28.

RAYMOND R. RIVARD, Madison, Wis., to Miss Edna Sims of Fond du Lac, August 16.

DONALD M. NORTON, Medford, Wis., to Miss Anne Russell of Lake Geneva, in August.

ROBERT E. BLUNS to DR. CHARLOTTE J. CALVERT, both of Madison, Wis., August 14.

LELAND J. BRANNON, Columbia, S. C., to Miss Viola Mobley of Kershaw, August 19.

LUCIUS GEORGE THOMAS, New Orleans, to Miss Julia Ruth Gray, August 6.

HUGH L. BASS to Miss Valeria Edelen, both of Louisville, Ky., in August.

Deaths

Henry Jackson Hayes ♂ Major, U S Army, retired, Memphis, Tenn., Medical College of Virginia, Richmond, 1914, member of the American Psychiatric Association, served during the World War, was appointed first lieutenant in the medical corps in 1919 and was retired as a captain in 1926 for disability in line of duty, was promoted major under an act of Congress in 1930, medical director of a sanatorium bearing his name, aged 44, died, September 15, of acute dilatation of the heart and influenza

Raymond Bartlett Morris ♂ Olean, N Y, Johns Hopkins University School of Medicine, Baltimore, 1910, secretary of the Cattaraugus County Medical Society, member of the American Roentgen Ray Society and the Radiological Society of North America, fellow of the American College of Surgeons, served during the World War, on the staff of the Olean General Hospital, aged 48, died, September 16, of myocarditis

Denis Edward McMahon, Elmhurst, N Y, University and Bellevue Hospital Medical College, New York, 1908, member of the Medical Society of the State of New York, fellow of the American College of Surgeons, past president of the Queens County Medical Society, on the staffs of St Catherine's Hospital, Brooklyn, and St John's Long Island City Hospital, aged 49, died suddenly, September 8, of heart disease

Arthur Dermont Bush, Decatur, Ga., Atlanta College of Physicians and Surgeons, 1901, member of the Massachusetts Medical Society and the Medical Association of Georgia, formerly professor of pharmacology, Emory University School of Medicine, Atlanta, author of "A Text-Book of Pharmacology" and "College Text-Book of Physiology", aged 58, died, September 6, in Albany, of multiple sclerosis

Maurice Daniel Barnette, Watertown, N Y, University of Michigan Medical School, Ann Arbor 1912, member of the Medical Society of the State of New York, served during the World War, on the staffs of the House of the Good Samaritan and the Mercy Hospital, aged 46, died, September 7, of complications following an operation for appendicitis

Randall Solon Tilles ♂ St Louis Washington University School of Medicine St Louis, 1908, formerly instructor in obstetrics, St Louis University School of Medicine, served during the World War on the staffs of the Jewish and St Louis Maternity hospitals, aged 50, died, September 14, following an operation on the gallbladder

Thomas Meares Green ♂ Wilmington, N C, University of Maryland School of Medicine Baltimore, 1900, fellow of the American College of Surgeons, on the staffs of the Bullock and the James Walker Memorial hospitals, Wilmington and the Babies Hospital, Wrightsville Sound, aged 54, died, September 14, of myocarditis

James Alexander Browne, Paterson N J, College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889, formerly health officer, county coroner and registrar of vital statistics in Paterson on the staff of St Joseph's Hospital, aged 67, died, September 6, of carcinoma of the tongue

Parnell E. Fisher ♂ Providence, R I, College of Physicians and Surgeons, Medical Department of Columbia College, 1894 on the staffs of the Rhode Island, Providence Lyng-In Homeopathic and Miriam hospitals, aged 65, died, September 16 of cerebral thrombosis, diabetes mellitus and arteriosclerosis

Frederick Wooster Owen, Morristown, N J, Georgetown University School of Medicine, Washington, D C, 1867, member of the Medical Society of New Jersey formerly on the staffs of the All Souls Hospital and the Morristown Memorial Hospital, aged 92, died, August 25, of lobar pneumonia

Derostus E. Smith ♂ Kansas City, Kan. College of Physicians and Surgeons, Medical Department Kansas City University 1900, Kansas City Homeopathic Medical College, 1901, aged 56, on the staff of the Bethany Methodist Hospital, where he died, September 2, of coronary thrombosis

John K. Moradian, Chicago, National Medical University, Chicago 1897 College of Physicians and Surgeons of Chicago School of Medicine of the University of Illinois, 1901 member of the Illinois State Medical Society aged 61 died August 13, of bronchopneumonia and myocarditis

Ulysses Morris Bachman, Cleveland Cleveland College of Physicians and Surgeons Medical Department Ohio Wesleyan

University, 1907, served during the World War, on the staff of the Polyclinic Hospital, aged 51, died, September 14, of subacute bacterial endocarditis

William George Miller ♂ Norristown, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1897, past president of the Montgomery County Medical Society, on the staff of the Montgomery Hospital, aged 59, died, September 6, of cerebral thrombosis

Frederick Hilliard Robinson, New Bedford, Mass., Tufts College Medical School, Boston, 1896, member of the Massachusetts Medical Society, aged 64, died, August 31, in the Huggins Hospital, Wolfeboro, N H, of strangulated hernia and diabetes mellitus

Edwin Ruthven Harvey, Long Beach, Calif., Eclectic Medical Institute, Cincinnati 1901 charter member of the board of directors and on the staff of the Seaside Hospital, aged 59, died, June 21, of a rupture of the esophagus into the left pleural cavity

James Aloysius McCracken, Norristown, Pa., Medical-Chirurgical College of Philadelphia, 1905, member of the Medical Society of the State of Pennsylvania served during the World War, aged 52, died, August 12, of injuries received in a fall

William Herbert Rothwell, Murray, Utah, Gross Medical College, Denver, 1900, member of the Utah State Medical Association, veteran of the Spanish-American War, formerly city health officer, aged 56, died, August 16, of carcinoma of the lung

Harold Albert Bachmann ♂ Chicago, University of Pennsylvania School of Medicine, Philadelphia 1917, member of the Central States Pediatric Society, on the staff of St Luke's Hospital, aged 41, died, September 21, of angina pectoris

John Gustavus Rulison ♂ Lansing Mich., University of Michigan Medical School, Ann Arbor 1903, served during the World War, member of the state legislature, aged 57, died, September 3 of coronary thrombosis

Rienzi R. Shank, Trotwood, Ohio, Medical College of Ohio Cincinnati, 1900, member of the Ohio State Medical Association, veteran of the Spanish-American War, aged 63, died, September 14 of heart disease

Burton O. Post, Sulphur Springs Ind., Medical College of Indiana, Indianapolis 1888, member of the Indiana State Medical Association for many years bank president, aged 69, died, September 1, of heart disease

Samuel B. McKerrihan, Portsmouth, Ohio, Medical College of Ohio, Cincinnati 1877, member of the Ohio State Medical Association, aged 84, died, August 13, in the Mercy Hospital of prostatic hypertrophy

Walter Elliott Lauderdale ♂ Geneseo N Y, College of Physicians and Surgeons Medical Department of Columbia College, New York, 1874, formerly mayor, aged 83, died, August 28 of cerebral embolism

George Malcolm Anderson, Lincoln, Kan. College of Physicians and Surgeons Medical Department Kansas City University, 1901 member of the Kansas Medical Society, aged 60, hanged himself, June 30

Jesse Overton, Troup, Texas, Louisville (Ky.) Medical College, 1893, member of the State Medical Association of Texas, health officer of Troup, aged 62, died, July 26 of carcinoma of the right lung

Harvey M. Griggs, Philadelphia, University of Maryland School of Medicine, Baltimore, 1890, aged 67, died, August 20, in the Homeopathic Hospital, Reading, of injuries received in an automobile accident

Ledru Pierson Smock ♂ Haddonfield, N J, University of Pennsylvania School of Medicine Philadelphia, 1882, member of the Medical Society of the State of Pennsylvania, aged 76, died, September 14

Thomas Bernard Scott ♂ Seattle, John A. Creighton Medical College, Omaha, 1917, served during the World War, aged 42, died, August 17, in the Virginia Mason Hospital, of pulmonary tuberculosis

Frederick Symon Cate, Los Angeles University of Maryland School of Medicine, Baltimore, 1898, aged 72, died, August 14 of chronic myocarditis, chronic arteriosclerosis and cirrhosis of the liver

Mason Allen, St Paul University of Minnesota Medical School Minneapolis 1897, member of the Minnesota State Medical Association, aged 60, died, August 31, of hypertensive heart disease

Arthur Allen Hugg, Middleport, Ohio, Jefferson Medical College of Philadelphia, 1883, member of the Ohio State Medical Association, aged 80, died, September 2, of cerebral hemorrhage

Arnold Frotcham Furrer @ Cleveland Harvard University Medical School, Boston, 1902 for many years member of the school board, aged 57, died, September 12, of coronary thrombosis

Homer Erwin Safford @ Detroit, University of Michigan Medical School Ann Arbor, 1896, member of the American Psychiatric Association, aged 63 died September 12, of hypernephroma

Andrew Hunter Sullivan, Sulphur, Okla (licensed, Oklahoma, under the act of 1908), member of the Oklahoma State Medical Association, aged 59 died, July 24 of heart disease

James Claude Paine, Peoria Ill, Northwestern University Medical School, Chicago 1898 served during the World War aged 58, died August 17, of a self-inflicted bullet wound

Alexis B Barker, Peoria Ill Cincinnati College of Medicine and Surgery, 1892 member of the Illinois State Medical Society aged 58 died September 10, of pulmonary tuberculosis

Robert Erskine, Lowellville, Ohio, Kentucky School of Medicine Louisville, 1898 formerly mayor of Lowellville, aged 79, died suddenly, August 30, of cerebral hemorrhage

Theodore Barrington David, Indianapolis, Indiana University School of Medicine Indianapolis, 1929, aged 28, was found dead August 21, of a self-inflicted bullet wound

Francis Edward Chalmers, George, Iowa University of Toronto Faculty of Medicine Toronto, Ont, Canada, 1904, aged 58, died August 1, of carcinoma of the pancreas

Augustus E Hewitt, Walnut, Kan, Rush Medical College, Chicago, 1889, also a druggist aged 73 died September 5, of cerebral hemorrhage and diabetes mellitus

Kate A Machin, Macomb, Ill Keokuk (Iowa) Medical College, 1898, member of the Illinois State Medical Society aged 72, died, August 6, of carcinoma of the liver

John Johnson Rufe @ High Bridge, N J, Jefferson Medical College of Philadelphia, 1902 aged 56, died, August 17 in the Easton (Pa) Hospital of septicemia

Edwin George Wood, Carmel, Calif, McGill University Faculty of Medicine Montreal Que, Canada 1885, aged 72, died July 10, of coronary thrombosis

Napoleon J A Salvail, Helena, Mont School of Medicine and Surgery of Montreal Que, Canada, 1883, aged 73 died, August 19 of angina pectoris

Lambertus Kuntz Perry Okla Vanderbilt University School of Medicine, Nashville, Tenn 1893, aged 75, died, June 25 of cerebral hemorrhage

George Littleton Wilson, Banks, Ark Memphis (Tenn) Hospital Medical College, 1900 aged 63 died, May 8, in Houston, Texas of heart disease

Benjamin Wesley Toothaker @ St Joseph Mo, Kansas City Medical College 1900 aged 58 died, August 4 in Rochester, Minn, of pituitary tumor

Jefferson D Clemons, Coronado, Calif University of Louisville (Ky) School of Medicine 1892 aged 72, died, July 17 of chronic myocarditis

Samuel Miller, Des Moines, Iowa Drake University College of Medicine Des Moines 1912 aged 49 died, August 14 in the Mercy Hospital

Ernest H Muse @ Roanoke Va University College of Medicine Richmond 1907 aged 52 died, June 10 of cerebral edema and arteriosclerosis

Verlin C Thomas, San Francisco American College of Medicine and Surgery Chicago 1904 aged 57 died July 29 of coronary occlusion

James Buckner Lewis, Salem Ill Eclectic Medical Institute Cincinnati, 1878 aged 80 died August 29 of carcinoma of the prostate

L L Janeway, Whitewell Tenn Chattanooga Medical College 1892 aged 83 died May 15 of lobar pneumonia and hip fracture

Amos E Calvert Parsons W Va Physio Medical College of Indiana Indianapolis 1884 aged 70 died August 17, of ascites

Noah S Nonamaker Atholne Bay N S Canada Jefferson Medical College of Philadelphia 1879 aged 79 died, May 24

Leo Blais Lac Megantic Que. Canada Laval University Faculty of Medicine Quebec 1904 aged 55 died July 10

Bureau of Investigation

HISTEEN

Another Addition to Asthma and Hay Fever Quackery

"Histeen" is a newcomer in the "patent medicine" field It is put on the market by the Histeen Corporation of Chicago According to the state records Joseph B Creevy is the president of the concern and also one of the three directors Creevy is no new name to the readers of this department of THE JOURNAL As has been brought out in other articles, Joseph Creevy some years ago was employed as an advertising man of a Chicago tailoring company and later employed as office manager of a general mail-order business Doubtless realizing that the chief asset in mail-order quackery is a knowledge of the mail-order business, plus a knowledge of advertising, and knowing how unnecessary it is to have any medical, chemical or pharmaceutical knowledge, Creevy went into the nostrum field What seems to have been his first 'patent medicine' concern was the 'Western Medical Association' (dealt with in THE JOURNAL, Jan 28, 1922), a crude piece of mail-order quackery which purported to sell to persons it never saw a treatment for epilepsy The name of the concern was later changed to "Western Medical Corporation" (the subject of an article in THE JOURNAL Aug 5, 1933), but Creevy continued to act as president

The next heard of Creevy was in connection with the Van Ard Sanatorium (dealt with in THE JOURNAL, April 19 1930), a piece of mail-order rheumatism-cure quackery Creevy was president and his brother-in-law H L Cassel, was secretary Cassel was also alleged to have formerly been employed by the same mail-order concern that employed Creevy Cassel, it appears, was also the sole owner of the Cass Laboratories (see THE JOURNAL Jan 15 1927) which, like the Van Ard outfit, sold a mail-order cure for rheumatism The secretary of the Van Ard Sanatorium at the time of its incorporation was one J A Carroll who is treasurer of the Histeen quackery and also connected with 'Witter Water,' a product advertised by "patent medicine methods

The Histeen business and other Creevy quackeries are housed in a building at the corner of Canal Street and Pulshing Road, Chicago One finds in the Chicago telephone directory the following concerns listed under the same telephone number and in the same building

WESTERN MEDICAL CORPORATION	VERNON MEDICAL COMPANY
H L CASS CORPORATION	RESEARCH PRODUCTS COMPANY
CHARLES J CAHILL M D	HISTEEN CORPORATION
WITTER WATER INC	

It should be said in explanation that Charles J Cahill, M D, was if he is not still, 'medical superintendent' of the Van Ard quackery, while the Vernon Medical Company is merely another name under which the epilepsy cure" is sent out

The advertising of Histeen first appeared about the middle of August, this year, and according to a large broadside that was sent out by the Histeen concern or its agents was to be featured in certain newspapers in the middle-west The broadside itself was a foot and a half wide by two feet long and it has been reduced to a few inches in the reproduction that appears with this article It was sent to druggists as an argument for them to "cash in" on the demand that the advertisements might be expected to create According to it, large display advertisements of Histeen were being carried in the following newspapers

Tribune Chicago	Commercial Aetna Danville Ill
Globe Democrat St Louis	Arkansas Rock Island Ill
Journal Transcript Peoria Ill	News Indianapolis
Register Republican Rockford Ill	Tribune South Bend Ind
State Journal Springfield Ill	News Sentinel Fort Wayne Ind
Herald Review Decatur Ill	Courier Journal Evansville Ind
Dispatch Moline Ill	Star Tribune Terre Haute Ind
Pantagraph Bloomington Ill	Star Muncie Ind
Democrat and Leader Times Davenport Iowa	

Those who are familiar with newspapers of the middle west will recognize that the papers listed above do not belong to the cheap and nasty type of publications but are of the responsible

and conservative class. This again verifies what is notorious to those familiar with the problem, namely, that the advertising ethics, by and large, of most newspapers and magazines is determined by the counting-house. When times are prosperous and advertising contracts for meritorious merchandise are comparatively easy to get, newspapers carefully scrutinize advertisements and reject much of the crude "patent medicine" copy offered. During financial depressions, with advertising incomes seriously threatened misleading and even fraudulent advertisements begin to appear in many of the best dailies published. A few years ago it was quite inconceivable that, for example, the *Chicago Tribune* a paper that has made a name for itself in fighting some forms of quackery, would accept an advertisement for such a product as Histeon, and the same is probably true of many of the other papers that are carrying Histeon advertising.

The Histeon advertising declares that hay-fever and pollen asthma are due to histamine poisoning and that Histeon is a compound which "acts to counteract histamine poisons, neutralize its action and release the irritating effect of histamine." The advertisements state further that the compound known as Histeon is the alleged discovery of a "Chicago specialist"—a "member of the American Medical Association"—who, after two and a half years of research evolved Histeon, and that his discovery has been verified by tests "conducted in the laboratories of a famous medical university."

DIRECTIONS—Take two tablets one half hour after each meal and at bedtime until the attacks are thoroughly relieved. Then one tablet four times daily will probably be found sufficient. Where necessary three tablets per dose may be taken with perfect safety as long as required—or as prescribed by your physician.

415-423 W 39th Street
THE HISTEON CORP
CHICAGO ILL.

30 TABLETS

HISTEON

Indicated in the
Palliative Treatment of
**ASTHMA
HAY FEVER
AND
BRONCHITIS**
PRICE \$1.00
**THE HISTEON CORP
CHICAGO ILL.**

DIRECTIONS—Take two tablets one half hour after each meal and at bedtime until the attacks are thoroughly relieved. Then one tablet four times daily will probably be found sufficient. Where necessary three tablets per dose may be taken with perfect safety as long as required—or as prescribed by your physician.

415-423 W 39th Street
THE HISTEON CORP
CHICAGO ILL.

Photographic facsimile of label from bottle of Histeon

When the Histeon Corporation was asked to give the name of the "Chicago specialist" and the "famous medical university" it refused to do so on the ground that when it entered into negotiations with the "specialist," it "agreed to purchase his formula and transact business only with the understanding and agreement signed to that effect that we would not at any time divulge his name or the name of the university where the tests were made with the product." This, according to the Histeon Corporation, "is solely for the purpose of protecting this physician's ethical standing." One can dismiss the fact that it might be difficult to injure the "ethical standing" of a physician who would enter into an agreement of this kind and assume that the exploiters of Histeon are much too experienced in the field of quackery not to know that the chief asset of the nostrum exploiter is mystery based on secrecy.

From what has been said regarding the main thesis of the Histeon advertising, namely, that hay fever and pollen asthma are both due to histamine poisoning and that Histeon is supposed to be an antidote for it one familiar with the research that has been done in this field would naturally assume that Histeon might be expected to carry as its chief ingredient some substance such as histaminase. Because of the large number of inquiries that have come in regarding this product, the Bureau of Investigation asked the Chemical Laboratory of the American Medical Association to have Histeon analyzed so that the findings could be presented to the medical profession and the public. The A M A Chemical Laboratory has not only done a large amount of chemical work on the product, but it reports on pharmacognostic and biologic investigations of the nostrum. The findings are incorporated in the report that follows.

LABORATORY REPORT

"Original specimens of Histeon (Histeon Corporation, 415-423 W 39th Street, Chicago) were submitted to the A M A Chemical Laboratory for examination at the request of the Bureau of Investigation. [A photographic facsimile of the label on the bottle appears on this page—LD.]

"The bottles of Histeon each contained 30 tablets of a gray color, possessing an aromatic odor. The average weight of a tablet was 0.42 Gm (approximately 6½ grains) with a variation of 28 per cent above to 15 per cent below.

"Qualitative tests indicated the presence of antipyrine, phenobarbital and ephedrine, a small amount of chloride, together with excipients such as starch, talc and calcium carbonate. The aqueous extract of Histeon was alkaline in reaction. Emodin-bearing drugs, acetylsalicylic acid, epinephrine, iodides and arsenic compounds were not found. Pharmacognostic examination indicated the presence of a small amount of powdered lobelia, but did not disclose stramonium.

"As the Histeon advertising gives the impression that this product contains histaminase, pharmacologic tests were made by an authority on this subject. He reported as follows:

Histaminase (the specific histamine inactivating enzyme) cannot be detected in the tablets. Histamine is not inactivated on sterile incubation with Histeon. Histaminase is an oxydase decomposing histamine with simultaneous consumption of oxygen. No oxygen uptake was observed when Histeon and histamine were kept under the proper conditions. Even if Histeon had contained a histaminase preparation it would probably be of no value when given by mouth because it would be destroyed by the stomach. Carefully prepared extracts from Histeon were dissolved in water adjusted to proper pH and were subjected to tests on smooth muscle. Contractions of dogs and guinea pigs intestine were produced with histamine and pilocarpine. Such contractions were very slowly relaxed by addition of the above Histeon extract (indicating the presence of a drug such as ephedrine). Antipyrine and phenobarbital were shown not to cause relaxation of the above contracted smooth muscles under the conditions of the experiment. Belladonna alkaloid (atropine) was not indicated.

"Quantitative determinations yielded the following:

Antipyrine	61.1 per cent
Phenobarbital	27.5 per cent
Ephedrine base	15 per cent

"Based upon the foregoing it may be calculated that Histeon tablets contain as essential ingredients: Antipyrine, approximately 60 per cent, phenobarbital (or phenobarbital sodium) approximately 23½ per cent and ephedrine, probably as ephedrine hydrochloride 1½ per cent. Each tablet, therefore, may be calculated to be equivalent to approximately:

Antipyrine	(0.257 Gm) 4 grains
Phenobarbital	(0.012 Gm) 0.2 grain
Ephedrine hydrochloride	(0.008 Gm) 0.12 grain

Based on the average daily dose (8 tablets) recommended, this would be equivalent to: Antipyrine, 320 grains, phenobarbital, 16 grains, and ephedrine hydrochloride, 10 grains. Furthermore the firm states that "where necessary, 3 tablets per dose may be taken with perfect safety as long as required."

This represents a daily dose of 12 tablets which (based on the foregoing) would be equivalent to: Antipyrine 48 grains, phenobarbital, 24 grains and ephedrine hydrochloride 14 grains.

From the analytical work, it seems then, that this "amazing new direct relief" has for its chief ingredient, making up nearly 60 per cent of Histeon, our old friend antipyrine, which has been used by physicians for nearly fifty years and has been prescribed for the purpose of giving symptomatic relief in certain forms of asthma and hay fever for almost as long. In addition Histeon has also phenobarbital (luminal), as well as ephedrine a substance that enters into an enormous number of proprietary remedies for the symptomatic relief of hay fever and asthma. And this mixture of well known drugs is the alleged discovery of a "Chicago specialist" who will not allow his name to be used because he is afraid of hurting his "ethical standing."

But this is not all of the story. The trade package of Histeon recommends as dosage either two or three tablets four times a day. The statement is made that three tablets four times a day may be taken with perfect safety as long as required. Obviously from the analytical work done, the person who takes Histeon gets 4 grains of antipyrine with each tablet, and where he takes three tablets four times a day he has a daily intake of 48 grains of antipyrine! He also gets in the same period about 2½ grains of phenobarbital and about 1½ grains of ephedrine.

In view of this, the following facts are of interest (1) A Mr F, who lived in the Chicago area and who had for some time been a sufferer from asthma, started taking Histeon apparently about the time it first came on the market the middle of August. On August 23 his family called in a physician, but Mr F was dead when the physician got there. The death certificate gave as the direct cause of death acute dilatation of the heart, with bronchial asthma and hypertrophy of the heart as contributing causes.

(2) A pharmacist in Milwaukee wrote in for information about Histeon and stated that a young woman who was suffering from hay fever had been using the nostrum, and added "It relieves the hay fever, but seems to make her sleep."

(3) A physician in northern Illinois reported that he had had many inquiries concerning Histeon and, being a sufferer

condition, as there is no evidence of nephritis or cardiac disease, nor could we trace the edema to any other cause."

On September 16 the officials intrusted with the enforcement of the National Food and Drugs Act seized 1,294 packages of Histeon in St. Louis, Mo., charging that the stuff was misbranded under the federal law. All that the quacks who exploit Histeon have to do, however, under our present inadequate law, is to cease making false, misleading or fraudulent claims on their trade packages and they will be exempt from the penalties of the Act. They can falsify to their hearts' content in the newspaper advertisements on billboards over the radio, or in any other avenues of publicity that will help to sell their nostrum. And the public will, in total ignorance, be persuaded to swallow this potentially dangerous mixture in the belief that a new cure has been discovered and that it is quite safe!

Summed up then, it seems that, essentially Histeon is a secret mixture of three well-known drugs, all of them potentially dangerous in the hands of the untrained. Further the nostrum is recommended in dosages that a physician with any regard for his patient's safety and his own reputation would hesitate to prescribe.

Correspondence

HEAT PROSTRATION AND DEHYDRATION

To the Editor—Two years ago, as I heard the story of a friend who collapsed after hours in his orange grove on an intensely hot day, it occurred to me that heat exhaustion is dehydration. He was brought back to practically normal by 1,000 cc of dextrose salt solution in the half hour it took to give it. THE JOURNAL published my report, Oct 17, 1931, p 1169.

My suggestion a little later to Dr Ray Lyman Wilbur, then Secretary of the Interior that Hoover Dam would be a good place to test this principle resulted in Dr W A Haas and the officials of the Six Companies interesting themselves in it and establishing the necessary plant and in Harvard University sending a research group to the dam in the summer of 1932.

In April 1932 I visited Hoover Dam and discussed prevention and treatment of heat exhaustion with Dr W A Haas, then in charge. Abundant good drinking water was then being provided. During that summer the use of abundant water both in prevention and in treatment was followed. Unfortunately, Dr Haas died in March, 1933, but his successor, Dr R O Schofield has followed the same plans this summer.

After the pioneer stage of crude facilities with its disastrous record of 1931, two simple preventive measures were adopted. The first was an adequate, palatable, easily accessible supply of good drinking water. Next was the blanket advice to every one to drink freely—more than enough.

During a part of July and August, 1932, a group of investigators came from Harvard University, under the leadership of Dr D P Dill for the purpose of studying especially the question of fatigue in high temperatures. The result of their work was to emphasize the importance of keeping up the supply of chlorides and the blanket advice that every one should take an abundance of table salt with meals or otherwise.

The Six Companies having the contract for building the dam together with the insurance carrier give the employees excellent hygienic care. They have established three first aid stations with personnel in addition to the hospital. Weekly first aid and educational meetings are held and at the meetings these heat protective measures have been fully discussed, so that the men are well informed on the general program and especially on the use of water in large quantities at all times. The emphasis has been less on salt but more on water. It should of course be on both. Great care is given the water supply, so much so that they did not hesitate to import water

WONDERFUL NEWS FOR HAY FEVER VICTIMS...IN THESE BIG ADS!

At Least One, Often Two Ads Each Week In Each of These Papers Blanketing Illinois, Indiana and St. Louis
Cash In On This Big Effort!

RELIEVE HAY FEVER
NEW SHORT-CUT WAY

CHICAGO SPECIALIST FINDS
AMAZING NEW DIRECT RELIEF FOR
HAY FEVER!

DOCTOR REVOLUTIONIZES
HAY FEVER TREATMENT!

HISTEON

ASTHMA

HISTEON

Miniature reproduction of a broadside to druggists telling them about the heavy advertising campaign of Histeon. In the original this was 1½ feet wide and 2 feet high.

from hay fever himself, he took some of the nostrum. He describes the physiological reaction thus:

"I took three tablets within a period of six hours which is a much smaller dose than recommended by the directions. It had quite definite physiological results. I am convinced that it contains ephedrine or some adrenalin-like substance. It did stop the hay fever symptoms and seemed to raise the blood pressure and increase the pulse rate. It also had an adrenalin reaction in that there was apparently a dilatation of the kidney capillaries as shown by marked increase in the amount of urine. The skin seemed quite dry and there was also quite definite dryness of throat especially of soft palate. My impression is that this preparation is definitely a dangerous preparation to give to the public. My own reaction was a feeling that I did not dare take much more of it."

(4) A Chicago physician sends in the following report:

Mr L, 26 years old, was persuaded to try this remedy [Histeon] for hay fever. On September 6 he took as directed two tablets after each meal and two next morning. About two that afternoon he became ill, nauseated, vomited twice, and soon began to have a severe angio-neurotic edema of the penis, testicles both hands and both feet. He is still unable to walk. It is very probable that Histeon is directly responsible for his

from Las Vegas, 30 miles away, when their own supply from the Colorado was temporarily unpalatable. At the hospital, preparations are at hand to give immediate intravenous and subcutaneous salt and dextrose solutions in acute cases of heat exhaustion. The result of this treatment, which was carried out in all cases both in 1932 and in 1933, has been most gratifying—prompt improvement and prompt recovery in all cases. A record of the 1932 cases is found in "Heat Cramps: A Clinical and Chemical Study" by John H. Talbott and Jost Michelsen (*J. Clin. Investigation* 12:533 [May] 1933). The results are a veritable laboratory demonstration. In the face of an excessively hot summer with scores of cases all over the country, the Hoover Dam community, though situated in an area of extremely high summer temperatures, has been practically exempt. The record 1931, seventeen deaths from heat exhaustion, no record of number of recoveries 1932, no deaths, seven mild cases of exhaustion, all patients recovering promptly 1933, no deaths, four cases of exhaustion, all patients recovering promptly.

Mr. H. C. Watts, superintendent of the substation of the Southern Sierras Power Company at Hoover Dam gives the following data on temperatures for approximately six weeks during July and August, 1933: average maximum, 108, average minimum 90, high range, 126, average humidity, 50 per cent. These temperatures were taken in the usual government official housing. They were taken on the upper dam levels from 700 to 800 feet above the bed of the river. Temperatures in the bottom of the river canyon, where much of the work is going on, are normally about 10 degrees higher than on the cliffs where these thermometers are located.

The plan of treatment is built on the principle that heat exhaustion is dehydration with loss of chlorides. A day on the desert demonstrates that the 3 or 4 quarts of water taken leaves the body by transpiration visible or invisible, and a taste of the skin shows that it takes the chlorides with it. The salty taste of the arms caused a sensation in a group crossing the desert the other day. In high temperatures the body cools only by evaporation. Water passing from a solid to a vapor needs heat. This it takes from the body and thereby cools it. It may be in invisible quantities and the person may not show any perspiration but after a few hours careful weighing and the record of intake and output shows the enormous loss of water.

Dr. Dill in his experiments (*J. Biol. Chem.* 100:755 [May] 1933) lost 20 pounds in seven hours exercise covering a 20 mile walk in a shade temperature of 104 F. He made up a part of that by drinking 13 pounds of water meanwhile, leaving a net loss of about 7 pounds.

Autopsy records show an empty heart and a congested skin after sudden death from heat exhaustion and sunstroke. Evidently heat dilates the capillaries in the skin and allows outpouring of water from the body until there is not enough fluid left to fill the blood vessels sufficiently to keep up pressure in the brain. When the blood pressure drops below 70, 60 or 50 unconsciousness follows. The reserve intracellular and intercellular fluid is unavailable or too slowly available and for this the loss of chlorides is partly responsible by disturbing the osmotic balance. The cyanotic purple look of a victim of heat exhaustion has kept observers from seeing that the patient really has not enough water (blood) rather than too much and in need of bleeding, as was the custom not so long ago.

Early in 1932 the Southern Sierras Power Company broadcast the information to its employees, and though many of them have been working in desert and heat they have had no heat exhaustions during either 1932 a comparatively cool summer or 1933 an exceptionally hot summer.

CORNELIUS VAN ZWALENBURG, M.D., Riverside, Calif.

MILK AND MOLASSES ENEMA

To the Editor—In *THE JOURNAL*, recently, inquiries were made regarding the possible origin of the use of the milk and molasses enema. One of these letters states that Dr. Senn over forty years ago found in his investigations that it was in common use in India and possibly its first employment originated there.

My own professional work dates to early 1883. The three previous years, while a student, I had the privilege of riding with my grandfather, a physician of wide experience, over a large country field. I found him at that time using this formula frequently and I recall his stating to me that it was an old and valuable therapeutic measure.

I have no knowledge of it beyond this. He was educated in the Yale University Medical School, graduating about 1834. Something like twenty years ago two surgeons in the Mountain Side Hospital began using the milk and molasses enema in their professional work and seemed to think that they had found something entirely new, but when I recounted to them my experience of many previous years and where my knowledge of it came from they concluded that perhaps there was nothing new under the sun after all.

LEWIS W. HAYSEY, M.D., Montclair, N. J.

PRECIPITATION TESTS FOR SYPHILIS

To the Editor—In an article in *THE JOURNAL*, August 12, page 542, Dr. Israel Weinstein presents his view of the history of the scientific development of the precipitation tests for syphilis. He apparently discovered an official confirmation of my priority in that part of medical science in the exhibit of the United States Public Health Service at the Chicago Century of Progress Exposition. He gives a list of scientists who published descriptions of precipitation tests for syphilis before I did in 1917. But he forgets to add that those tests never were approved of as reliable in practical laboratory work. None of my predecessors were able to get results of practical value with their methods. My reaction, the description of which was published in 1917, was the first one that proved to be of practical value. That is the main point. I was the first to show that it is possible to perform a precipitation test for syphilis of the same reliability as the complement fixation test of Wassermann.

The authors mentioned by Dr. Weinstein—Michaelis, Jacobsthal, Bruck, Hidaka and Hecht—never at all claimed priority against my methods. In all scientific books about precipitation tests even in the one written by Jacobsthal himself, will be found the confirmation of my priority in that field of science.

Dr. Weinstein criticizes the fact that I improved my methods during the course of time and presented several reactions, whereas Kahn in America worked out only one. The Kahn test was proved to be the best at the conference in Copenhagen and even better than my last reaction, the clarification test, at the conference at Montevideo. Dr. Weinstein forgets to add that Kahn himself executed his own method at that last conference whereas my reaction was performed by other scientists whom I do not know personally and who did not learn the method from me. Kahn himself in absolute loyalty laid stress on that important point in his review of the conference at Montevideo. Thus the question which of the two tests (Kahn test or clarification test) is really the better is not yet settled. Dr. Weinstein obviously thinks that the fact that an author for instance Kahn never altered his method proves that his method is absolutely perfect and does not need any improvement. That is an error. On the contrary, the same fact may be caused by the impossibility of improving the method. Every body knows that I am the last one to deny the great value of the Kahn test but like all the biologic methods even that

excellent test seems to have besides its well known advantages also some disadvantages in comparison with other methods. In some articles published in American medical journals I find complaints about the difficult reading of weakly positive Kahn reactions and about the instability of the antigens. With cerebrospinal fluids the Kahn test seems to be more complicated than other methods. If I were the author of the Kahn test I would try to alter those weak points of the method if it is possible. I do not know whether even Kahn himself would be able to do so if he wished to, for in all the biologic methods there is a certain limit of efficiency that cannot be passed over by technical improvements. Therefore the fact that a certain method was never altered by its author does not prove that it is absolutely perfect and does not need any improvement. As far as I know, Kahn himself never claimed the absolute perfection of his test.

ERNST MEINICKÉ MD Hagen Delstern, Westphalia
Director, Serologischen Instituts und
der Lungenheilstatte Ambrock

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

BLOOD CELL COUNTING TECHNIC

To the Editor—In making a white or red blood cell count how much difference in the counting in each of the four corners do you consider a good count? The number of cells in each corner will vary in all counts and I should like to know the average difference. When Wright's blood stain is used will a longer time in using the stain undiluted or in using it after it is diluted with water bring out the polymorphonuclears and other cells more distinctly? Which part of the staining process brings out the polymorphonuclears? In making up a solution with tablets and methyl alcohol I find that there is much precipitate when the water is added when using it for staining. What is wrong? There are many variations in the technic of staining with Wright's stain and I should like to know which is considered the best one. Kindly omit name.

MD Minnesota

ANSWER—An accurate red or white blood cell count can be made only with an accurate hemocytometer, such as the Levy, which is the best obtainable. The cover glass must also be accurate and specially made for blood counting apparatus. The apparatus must be dry and clean, free from dust or lint. The diluting pipets must be accurate and preferably tested by the Bureau of Standards.

After the dilutions have been made the pipet should be shaken for at least two minutes and the first two drops discarded. Then the central platform should be filled with blood. If any air bubbles are present or liquid overflows into the grooves of the slide another mount should be made. The cells should be allowed to settle for three minutes. Low power is used in examining for uniformity of distribution. If the cells are unevenly distributed the diluted blood should be shaken thoroughly and the mount repeated.

At least 100 small squares should be counted. For accurate work 200 are recommended. Each twenty-five squares should be added separately. The highest and lowest totals should not vary by more than 25. Greater variations indicate poor mixing and necessitate repetition of the work. Osgood and Haskins Laboratory Diagnosis (Philadelphia, P. Blakiston's Son & Co 1931) gives an excellent discussion of the technic of accurate blood counting.

The precautions for the white cell count are the same as given for the red cells. The four large squares (each 1 sq mm in area and containing sixteen medium sized squares) at the corners of the ruled area are counted.

The essentials of good staining with Wright's stain are a good blood smear and a good stain. If the stain is purchased in tablet form one tablet should be ground up in 10 cc of absolute anhydrous methyl alcohol (one tablet is 0.05 Gm.). The mixture is shaken and allowed to stand twenty-four hours and should be filtered before use. A fresh stain should be made at least once a month and filtered as often as a precipitate forms. The stain must be well stoppered to prevent evaporation of alcohol or the taking up of moisture.

The slide is covered with the stain and allowed to stand for one minute. During this minute the methyl alcohol fixes the

cells. Then an equal amount (same number of drops) of distilled water is added. Osgood and Haskins recommend a buffer phosphate solution instead of water (6.63 Gm of Merck monopotassium phosphate and 2.56 Gm of Merck anhydrous disodium phosphate in 1 liter of distilled water, 1 cc of chloroform being added). The time for the water or buffer solution varies with the stain, and the optimum must be determined by trial. This is usually one minute but may be as high as three minutes. Old stains require a longer time. When the time is up, the stains should not be poured off but floated off with water, the slide being held level. The slide should be washed thoroughly from half a minute to a minute. The slide should be placed on end to dry in the air.

The white cells should show distinct characteristic granules. If these do not show or are pale, and if the neutrophil granules are pink instead of lilac the fault is due to too short staining and the time must be increased. Poor differentiation may be due to too short a time of washing.

There should be no precipitate or debris on the slide. A precipitate will result from the use of a stain that needs filtering but is more often due to using too small an amount of Wright's stain permitting the methyl alcohol to evaporate almost completely before the water or buffer is added. It may also be due to pouring off the stain instead of floating it off and to insufficient washing.

USE OF METAPHEN IN PEPTIC ULCER

To the Editor—Dr Clarence M. Trippe (*Ann Int Med* 6:901 [Jan] 1933) has discussed in some detail the oral administration of metaphen in the treatment of gastric ulcer, duodenal ulcer and chronic ulcerative colitis. The author gives an average dose of 3 cc of 1:500 solution of metaphen and reports most gratifying results in eighty-two patients. In view of the fact that metaphen belongs to the nitrobenzene mercury complex would one be apt to produce severe renal damage from the oral administration of such a preparation? Would you consider this a safe therapeutic agent in obstinate cases not doing well under a strict Sippy regimen? Please omit name.

MD Indiana

ANSWER—P. J. Crittenden has investigated the action of metaphen, given intravenously, on the blood pressure, heart rate, respiratory rate, red cell fragility, and kidneys of dogs (*J Pharmacol & Exper Therap* 44:423 [April], 1933, 46:39 [Sept] 1932) and reports that the dosages recommended for intravenous use in man, 0.05 mg per kilogram, do not produce ill effects. As much as 1 mg per kilogram given intravenously for a long period did not produce any demonstrable changes in the kidneys. The lethal dose in rabbits and dogs varies between 3 and 5 mg per kilogram.

When given by mouth, the same precautions must be observed as for any other mercurial compound, considering the fact that metaphen has a mercury content of from 56 to 57 per cent. The daily administration of 16 cc of a 1:500 solution, which corresponds to 32 mg of metaphen and approximately 17 mg of mercury, for an unlimited time without a check on the urine is not without some danger despite the small amounts absorbed. The experiments of C. M. Trippe on the oral administration of metaphen to rabbits as described in his article do not give sufficient details from which definite conclusions can be drawn. At best this method of treatment is still in its experimental phase and its use should be restricted to patients who can be carefully checked for evidence of mercury poisoning.

BATH URTICARIA—UNUSUAL PIGMENTATION OF FACE

To the Editor—A girl aged 19 whose general physical condition is normal has a tendency to a bath urticaria. Immediately after a cold bath or swim she develops an intense itching all over the body. A hot bath or other external heat is the only means of relief. Will you give any information and the bibliography on this subject? Another girl aged 20 is developing pigmentation of the face closely simulating the mark of pregnancy. What remedies can you suggest for this disfiguring ailment? Please omit name.

MD Florida

ANSWER—Urticaria from cold, congelation urticaria, has been given considerable notice in recent years. Lehner in his case (*Klin Wchenschr* 8:306 [Feb 12] 1929) demonstrated the presence in the blood serum of the part exposed to cold a substance which caused a wheal when injected into the skin of the patient or of other persons and in the healthy persons sensitized the spot injected so that it reacted to cold with wheal formation the Prausnitz-Küster reaction. By exposing to cold an arm in which the circulation of blood was cut off by a constrictor he showed that the irritating substance appeared only in the serum from the part exposed to cold. Serum from the other arm caused no reaction.

By applying an ice pack to the chest before breakfast, he caused a hemoclastic crisis during which the venous blood was cherry red and the white blood count only half that taken before the crisis with increase of polymorphonuclears and

decrease of lymphocytes. The refractometric index, 13480 before the crisis, was 13470 after it and the coagulation time was increased from four to five minutes. After two such shocks on succeeding days, the sensitization began to decrease and by persistent daily shocks was reduced nearly to normal in two months.

Perutz, Brugel and Grunfeld (*Klin Wchnschr* 8 1999 [Oct 22] 1929) reported failure to find any evidence that the disease is allergic in nature, but a number of other observers have reported results agreeing with those of Lehner (Weissenbach, R. J., and Brisset, J. P. *Ann de med* 32 233 [Nov.] 1932 Klein, A. C. *Dermat Wchnschr* 95 1741 [Dec. 3] 1932 Vallery-Radot, Pasteur, and Blamoutier, P. *Bull et mem Soc med d hop de Paris* 47 1907 [Dec. 21] 1931).

The girl with pigmentation of the face should be questioned on the use of any toilet water, such as cologne water, or perfume on her face before going into the sun (Lane, J. E., and Strauss, M. J. *Toilet Water Dermatitis* *THE JOURNAL* Sept. 6 1930 p. 717 Gross, Paul, and Robinson, L. B. *Berlock Dermatitis Unusual Dermatitis and Pigmentation Following the Use of Perfume* *Arch Dermat & Syph* 21 637 [April] 1930). She should be asked also whether she has used any preparation for the removal of freckles. While the pigmentation without preceding inflammatory patches is not typical the question of the use of phenolphthalein should be investigated.

If the pigmentation is about the mouth, erythrose peribuccale pigmentaire of Brocq must be considered, a vascular disturbance with pigmentary changes in women manifesting vascular instability and in most cases some definite pelvic disturbance (Ormsby, O. S., and Ebert M. *Erythrose Pigmentaire Peribuccale de Brocq*, *Arch Dermat & Syph* 23 429 [March] 1931 Obermayer M. E. and Becker S. W. *Erythrose Peribuccale Pigmentaire de Brocq*, *ibid* 26 444 [Sept.] 1932).

The possibility of Addison's disease or hyperthyroidism must be considered, though it is unlikely that either of these conditions is present.

If no etiologic factor can be discovered and removed with benefit, the peeling treatment may be tried, with full knowledge that any agent which causes peeling may produce a recurrence of the pigmentation. The application might be tried twice daily of bismuth subchloride, 3 Gm., hydrogen dioxide, 10 cc. wool fat and petrolatum to make 30 Gm. until exfoliation occurs, then waiting to see the result and repeating if necessary.

LOW BLOOD PRESSURE IN PREGNANCY

To the Editor—A primipara aged 22 Caucasian whose father died at 50 of influenza and pneumonia but whose mother is living and well was somewhat anemic. The mother had several children without any troubles in delivery. The chest circumference of the patient Jan. 5 1933 was 75 77 and 79 cm. the last is full expansion. The pulse was 96 sitting. There was no elevation of temperature. The weight was 96½ pounds (43.7 Kg.) the maximum pelvic circumference 82 cm. The pelvic measurements were spines 22 cm. crests 24.5 cm. trochanters 30 cm. external conjugate 18.5 cm. I gave orders for a hematim in addition to the usual care. The blood pressure was 116 systolic 60 diastolic. She ate little as she was homesick and her family was far distant. I suspected a tuberculous area in the left chest. She was of the pale black-haired aquiline-nosed slender type with easily observed subcutaneous veins often seen in southern Jewesses. She is not Jewish. She was nervous and irritable. Under care every two weeks the chest condition improved rapidly and in two months nothing abnormal could be found. Her health and general condition went up nicely. Her appetite improved. She has had no dental trouble as I have seen that she has an adequate calcium diet. Her nervousness grew worse until I gave her a sedative she feels fine now. Her weight remained nearly stationary being 99 pounds (45 Kg.) Feb. 18 103 pounds (46.7 Kg.) April 4 109 pounds (49.4 Kg.) May 18 112 pounds (50.8 Kg.) June 27 and 116 pounds (52.6 Kg.) July 6 and for the first time she had a protruding abdomen. But her blood pressure since January 26 has been very low. At that time it was 94/76 June 27 it reached 96/72 and it has varied somewhat in between. This has caused me some anxiety and I am wondering just how dangerous such a small pulse pressure may be. The fetus seems to have developed normally the heart tones being between 120 and 144. The position seems to be left occipitotransverse consistently. The urine has been invariably negative to both chemical and microscopic examination. The breasts are developing nicely. The last period occurred Nov. 8 1932. I estimated the fetus at about 4½ pounds (2.150 Gm.) June 27. Do you think the pelvis will interfere with delivery? Is this low blood pressure dangerous? The patient is due between July 20 and August 15. What troubles do you expect I will have if any and what management would you advise? I advised hospital delivery. She wants rectal anesthesia. M. D. Washington

ANSWER—No real trouble need be anticipated in this case. The low blood pressures recorded are not unusual in pregnant women because there is generally a drop of from 5 to 10 points during gestation. If the blood pressure goes below 90 however, the patient should be made to rest at frequent intervals. She should be given tonics, halibut liver oil with viosterol more calcium and abundant milk, fresh fruits and vegetables. If she is still anemic, active treatment should be directed to over-

come this also. If the baby is as small as estimated, there will most probably be no difficulty in spite of the fact that the pelvis is small. The patient should, of course, be given a test of labor. It is unfortunate that the diagonal conjugate measurement was not made because this is much more important than the external measurements. This measurement should now be made but under strictly sterile precautions, because delivery is due about August 15. The decision to have the patient in a hospital is a wise one, because all primiparas especially those in whom there are defects, should be delivered in a hospital. There is no reason why the patient should not be given rectal analgesia if she desires it unless, of course there are abnormalities in the rectum which contraindicate its use.

AMENORRHEA

To the Editor—I have a patient aged 18 who has not menstruated for six months. She began her menstrual period when she was 13 but it was never regular coming every two three or four months and now since December 1932 she has had no sign at all. She is a perfectly normal girl and has just completed her high school education. She has gained about 10 or 15 pounds during the last six months. I have given her whole ovary substance by mouth 5 grains (0.3 Gm.) three times a day for fifteen days with no results. Then I gave her six ampules of whole ovary hypodermically at two day intervals with no results. I have thought of dilating the cervix but because of her previous menstruation I did not think it necessary. What would you advise me to do? Please omit name.

M. D. California.

ANSWER—The absence of menstruation is not necessarily an indication that treatment must be instituted to bring about a return of the menstrual function. However, since the patient is young and since she has gained in weight during the period of amenorrhea it is advisable to give her thyroid extract. This will have a much greater tendency to restore the menstrual flow than the ovarian preparations that have thus far been administered. The control of menstruation does not reside in the ovaries but in the pituitary gland. However, the thyroid gland has a definite effect on intense bleeding and thyroid extract given by mouth frequently, has a beneficial effect in cases of disturbed menstrual function. Of course, the patient must be watched closely while she is taking thyroid and it is wise first to have a basal metabolism test performed. If the rate is lower than normal there is an added indication for the use of thyroid but even if the rate is normal these preparations should be given. The Council on Pharmacy and Chemistry omitted from N. N. R. all whole ovarian preparations because there is no satisfactory evidence that they are active when given by mouth, nor is there evidence to justify their use by parenteral administration. The female sex "hormones" such as "Theelin" belong to a class of active principles, unlike the former in that they possess activity, but their therapeutic usefulness has not been placed on an established basis. In this connection reference is made to the Report of the Council on Estrogenic Substances Theelin, *THE JOURNAL*, April 29, page 1331.

INDUSTRIAL HAZARDS OF WORKERS WITH HARD RUBBER PLATES

To the Editor—I have a patient who does engraving and the cutting of rubber plates. He has become ill with nausea and dizziness whenever he goes round his place of work. He has been ill for several months. He is also troubled with cramping in the abdomen and aching in joints and muscles. His blood shows stippled red cells but he maintains that there is no lead around his work. Please advise what other type of poisoning such a patient may have from working with rubber and ink.

R. B. ROBINS M. D. Camden Ark.

ANSWER—It is assumed that this workman's duties involve only exposure to hard rubber plates and the substances ancillary to this work. Lead is little used in hard rubber and especially is likely to be absent from light colored rubber. Nevertheless it may be the cause of the disease state. The rubber should be tested for lead.

Antimony may be present. In the engraving process, antimony dust may be evolved and breathed. An increasing amount of attention is being paid to antimony as an industrial hazard. Gastro intestinal involvement is a prime manifestation. Should this workman use in his trade cleansing or softening agents such as benzene, naphtha or carbon tetrachloride, or similar agents much used in the compounding of rubber, the disorder, if occupational in origin may be traced to one or more of these substances. Should the information here furnished not be sufficient additional data as to the exact substances used at work should be compiled and sent for supplemental advice.

The fact that the workman becomes ill on merely going about the work place suggests the ill defined state related to sensitivity to naphtha or benzene occasionally encountered in industry.

CAUSES OF PIGMENTATION

To the Editor—A white child $9\frac{1}{2}$ years of age has acquired in the past four years following a severe case of chickenpox, a mottled heavy brown pigmentation over the exposed portions of the body. It is worse on the dorsal than on the ventral surfaces of the arms. It is sharply demarcated around the neck, corresponding to the cut of the child's dress. The same description applies to the area protected by the shoes. The pigmentation is present on the mucous membranes of the mouth. She has had a few dizzy spells before breakfast but no undue fatigue or asthenia. She is gaining weight normally. There is no evidence of tuberculosis. The diet has been adequate in protein and vitamins. The pigmentation is increased by the sun. Salicylic acid ointment was applied to a small pigmented area on the skin until all superficial epithelium was denuded without effect on the pigmentation. The child's muscle tone is excellent. The appendages of the skin are normal. She is of average height and weight for her age. The blood pressure is 100 systolic 50 diastolic. The basal metabolism is plus 2. The urine is completely negative for sugar and albumin but a few pus cells are present. Is there any reason to believe that this pigmentation will be helped by injections of extract of the suprarenal cortex? What treatment would you suggest? Kindly omit name. MD Louisiana

ANSWER—It would be of interest to know what if any local applications have been made to the skin and whether the child was given sun or artificial light baths. Mercury preparations sometimes cause pigmentation and certain perfumes are capable of causing pigmentations if their use is followed by exposure to strong light. For such pigmentary changes to remain for four years, there would have to be repeated use. Was the child given arsenic for any length of time? Some persons react to a comparatively small amount. Have silver solutions been used in the nose and throat? The pigmentation of argyria is slate blue, however.

If all these possibilities can be excluded the glands of internal secretion, the ovaries, thyroid, pituitary or suprarenal cortex, may be suspected. The presence of pigment on the mucous membrane suggests the latter. The changes in these glands associated with puberty may correct the condition or experimental treatment with gland extracts may be tried. This seems justifiable if done cautiously.

UNUSUAL DISLOCATION OF ULNA

To the Editor—Would you kindly advise as to the frequency of a forward dislocation of the distal radio-ulnar articulation as a complication of Colles's fracture of the wrist? In a simple Colles fracture with slight backward displacement of the distal fragment and no impaction this complication seemed to occur. The reduction was easily obtained and checked by roentgenogram following application of a molded plaster splint. One week later massage and baking were instituted. Two weeks following the injury the distal extremity of the ulna was unusually prominent in front of the wrist and the prominence due to the styloid process was absent. This condition persisted after good union of the fracture and seriously interfered with flexion of the hand also causing numbness. Temporary relief is obtained by using a wrist support exerting pressure over the lower extremity of the ulna by means of a rubber pad. What treatment is indicated to restore permanent function? Please omit name. MD Washington

ANSWER—The unusually prominent dislocation of the ulna was probably caused by slipping of the fragments. The numbness is probably caused by nerve pressure. The treatment indicated is open operation, with living fascial suture.

The backward and upward displacement of the ulna entails a disruption of the inferior radio-ulnar joint. According to Wilson and Cochrane, if the displacement is marked a strain is exerted through the internal lateral ligament on the ulnar styloid and this is frequently fractured. In other cases it is the ligamentous attachment of the fibrocartilage that gives way instead or the cartilage may be torn across. With the continuation of the force and the rupture of the structures binding the lower ends of the radius and ulna together the distal radial fragment may be entirely separated from the head of the ulna which on account of the accompanying displacement of the hand backward and toward the radius appears to be dislocated forward in the wrist.

Anterior luxation of the head of the ulna usually incomplete may occur as part of the displacement complex in Colles's fracture. Posterior dislocation of the lower end of the ulna with or without accompanying fracture of the ulnar styloid may occur independently of fracture of the radius but is rarely encountered.

The injury apparently is caused by a severe twisting form of violence with hyperpronation of the forearm. The hand is held in the position of pronation, rotational movements of the forearm are restricted with pain referred to the inferior radio-ulnar joint and the head of the ulna is prominent posteriorly.

Reduction is readily accomplished by strong traction on the hand with forward pressure on the head of the ulna followed by sharp supination of the forearm. The wrist should be fixed in the supinated position with the hand dorsiflexed on a molded

plaster cock-up splint. Immobilization should be maintained for three weeks in order to allow strong healing of the torn ligaments, without which a condition of chronic recurrent luxation is probable. The dislocation, even when reduced, is not easy to hold and a wrist strap should be worn for some time.

In a case of chronic recurrent luxation of six years' duration, Wilson and Cochrane found the attachments of the discus articularis and ulnar lateral ligament torn across, and they were repaired by the introduction of a fascial ligament passing from the ulnar portion of the disk to the posterior surface of the head of the ulna, where it was anchored in the bone. This resulted in a stable and painless wrist with good function.

MIGRAINE AND MENSTRUATION

To the Editor—A married woman aged 25 has been a sufferer from headaches and vomiting since her high school days. When the headaches appear, vomiting is obstinate and not even water can be held on the stomach. The spell lasts from six to forty-eight hours and may occur anywhere from one to five times a month. Her past medical history is irrelevant. The only abnormality noted is a history of amenorrhea for ten months following the birth of her only child (which was bottle fed). During the second and third trimester of her pregnancy and during the period of amenorrhea following the pregnancy the spells were absent. Physical examination reveals no definite pathologic condition. The patient wears glasses (the attacks come on whether she wears glasses or not). Pelvic examination reveals a superimposition of the uterus. The gastrointestinal system shows nothing abnormal and there are no foci of infection. (The tonsils and appendix have been removed and the teeth are in good condition. No evidence of sinusitis is present.) The blood pressure is 110 systolic 80 diastolic. Because of the history of amenorrhea and because although her periods are regular, they show a scanty flow ovarian injections were given between periods and corpus luteum right after the menses. No beneficial results were noted. Phenobarbital 1 grain (0.065 Gm.) a day has not produced any marked effect on the patient. I have finally narrowed down my diagnosis to this: (a) hypofunction of the ovary (b) migraine or allergic headache (cause unknown) (c) petit mal. Which do you think it is? Please omit name and address. MD Wisconsin

ANSWER—The most likely diagnosis in this case is migraine, which not infrequently occurs during the menstrual period. Women so afflicted characteristically advance the information that their headaches are absent during pregnancy and the period of nursing but return when the monthly flow of blood starts again. The headaches often disappear completely and permanently during the menopause. Further evidence of the correlation between migraine and the reproductive organs is the fact that these headaches often occur in women who have menstrual disturbances.

Since the only freedom from the attacks of headaches and vomiting this patient had was during an extended period of amenorrhea, it is logical to assume that an artificial menopause would bring about a cessation of these troublesome symptoms. However, since the patient is only 25 years old, this is out of the question at present. If the headaches and vomiting become absolutely intolerable and cause distressing symptoms, it might be advisable to produce a temporary amenorrhea by means of small doses of roentgen rays or radium, but even such a procedure should be resorted to as a measure of desperation. A much safer way to bring about a cessation of the menses and relief of the symptoms is for the patient to become pregnant again. If the past experience is repeated, she will have relief from the headaches and vomiting for about sixteen months.

SEDATIVES AND FLUIDS BEFORE OPERATION

To the Editor—Regarding the twenty-four hour preoperative period in laparotomies for hysterectomy or tumor, what is thought by the best men regarding the routine use of sodium amylal and forced fluids containing alkalis by mouth? Is it not true that this fluid is probably excreted before operation is usually performed? And why the sodium amylal?

D B RICE MD Britton S D

ANSWER—No more reason exists for routine use of sedative before a hysterectomy than for any other major operation.

The reasons for a sedative are chiefly three: first, to permit the patient to get a good night's sleep; second, to avoid the preoperative nervous exhaustion period often unnecessarily long; and third, to permit the use of a smaller amount of anesthetic by its synergistic action. A fourth reason applies when procaine hydrochloride is used for anesthesia, since drugs of the barbitol group are natural antagonists; they prepare the patient against a toxic reaction from procaine.

It is good practice to give a small sedative dose of some of the barbitol group the night before an operation.

Many surgeons use the barbitals as preoperative preparation, giving one or more sedative doses in patients who tolerate it well. This is particularly indicated when local anesthesia is used. Some caution has been advised in liver damage and it is wise to limit their use in ether and chloroform anesthesia.

Fluids should be forced to the point of satisfying the tissue demand, and the same indication holds true for the preoperative use of alkalis. The excess will normally be excreted. Neither can be ordered for routine use but as a rule it is wise to increase the fluid intake the day before operation, since anxiety may actually limit the normal intake and nervousness may increase the normal excretion.

Since starvation, fever and toxemia tend to produce acidosis, alkalis may be indicated. On the other hand, in the presence of persistent vomiting an actual alkalosis may exist. Obtaining the amount, reaction and specific gravity of the urine is simple and usually a satisfactory method for determining the necessity for alkalis or forced fluids.

The preoperative addition of easily digested starches and sugars to the diet is commonly indicated, especially in operations producing a burden on the liver. Dextrose is frequently given subcutaneously before and after the operation, but tolerance toward it must be watched by repeated urine examination.

Sodium amytal has no demonstrable clinical merit over soluble barbitol preparations, which act quickly and may be given by hyperdermic injection.

The intravenous use of this group is contraindicated until tolerance has been established except in emergencies.

The use of the barbitol preparations by mouth is usually satisfactory.

Clinically phenobarbital and similar preparations in properly adjusted dosage are as satisfactory as amytal for their sedative action. Any of this group apparently may produce marked restlessness and a type of delirium in large doses.

It is probable that other sedatives may be equally satisfactory but many have more disadvantages than the barbitol group.

CAUSES OF HIGH PULSE PRESSURE

To the Editor—Please give me the causes of high pulse pressure. I have found this condition several times with apparently well functioning aortic valves.

L. S. MacMILLAN, M.D. Rome, N.Y.

ANSWER—The pulse pressure is increased in essential hypertension in which the systolic pressure is generally increased more than the diastolic in arteriosclerosis and hence often in older people occasionally after severe hemorrhage in aortic regurgitation, and in myocardial disease associated with pulsus alternans, as a sign of improvement after an attack of cardiac failure, as a precursor of an attack of heart failure because of sudden increase in systolic pressure and with apparent or actual increase in auricular fibrillation. It is also increased normally after exercise, because of greater elevation of the systolic pressure than the diastolic.

DOSAGE OF COPPER WITH IRON

To the Editor—May copper citrate be used with Bland's pills (internal use)? If so kindly let me know the dosage.

EMILIE BRETHAUER, M.D. SuiFu China

ANSWER—Yes. In doses of 0.01 Gm. three times daily. There is no convincing evidence that the therapeutic effect is any better than that obtained for administration of iron alone, in the opinion of the Council on Pharmacy and Chemistry.

SUBCUTANEOUS NODULES AND BURSOPATHY

To the Editor—I have under my care a girl aged 11 who four months ago noticed swelling of the left knee with loss of weight and increasing weakness. Examination at that time revealed a bursitis of the left knee. Two months later swellings (enlarged bursae) appeared on the dorsum of both hands and on the right knee and both ankles. The weakness increased and she complained of slight pain and occasional stiffness of the joints especially the fingers. Examination showed the enlarged bursae of the joints mentioned but was entirely negative otherwise. Kindly advise probable diagnosis and treatment. Please omit name.

M. D. Minnesota

ANSWER—This case appears to belong to the group of synovial swellings, in which is included the condition referred to as Baker's cyst.

Pathologically some of these cases involve the tendon sheaths and rice bodies are occasionally found. The cause of this condition is usually infection. The important infections are those which cause rheumatoid arthritis, tuberculosis and syphilis. An article on Syphilitic Bursopathy by M. J. Morrissey and H. S. Reynolds appeared in *THE JOURNAL* April 22.

Considerable information may be obtained by aspiration and biopsy in order to determine the presence or absence of tuberculosis or syphilis. Guinea-pig inoculation and Wassermann and Kahn tests are indicated. The Pirquet test should be made human and bovine strains being used.

The treatment must be predicated on a diagnosis based on the recommendations made. The correspondent should refer to the works of MacCallum and of Dawson and Boots on subcutaneous nodules.

INDUSTRIAL HAZARD IN MANUFACTURE OF ASBESTOS BRAKE LININGS

To the Editor—In connection with the manufacture of asbestos brake linings it would seem that the material is pressed through a small gas oven measuring 2 feet by 2 feet which uses a mixture of coal tar 1 part alcohol 2 parts and bakelite 2 parts. Can you inform me as to whether or not the gas formed by these mixtures would be injurious on inhalation and whether or not the liquid itself would be dangerous on contact with the skin or to wounds?

A. W. LAZENBY, M.D. Baltimore.

ANSWER—Bakelite is a synthetic resin commonly dissolved in a mixture of benzene and ethyl alcohol. As a powder it is akin to hexamethylenamine (methenamine), which gives rise to the well known hex' dermatitis. Its irritant action is largely attributable to formaldehyde derivatives. Coal tar is a heterogeneous mixture of many high boiling point coal fractions. If benzene is used as a solvent or diluent for the bakelite the vapors present are a potential source of damage after intake through the lungs. The coal tar is only slightly evaporable but if evaporation occurs the vapors produced are conducive to inflammation of the respiratory tract.

The type of alcohol used is not specified but it is assumed to be ethyl. Its vapors in low concentrations may be ignored as a harmful agent.

The mixture as described is to be regarded as a source of dermatitis as its chief harmful property for the human body.

UNBALANCED DIETS IN TURKEY

To the Editor—I have been working for some years in Turkey where I have met a number of problems that baffle me. The diet of a large proportion of the patients that come to me consists chiefly of unleavened bread and some form of cracked wheat. This is pieced out among the better off with eggs, milk and fermented milk. For many of them vegetables and fruit are not available except during a few months in the summer. Most of these people have some sort of gastrointestinal complaint which I have considered to be in no small part due to the unbalanced diet. But another great difficulty that I have had was in dealing with the almost constant headache so often complained of. This too I have felt had a dietetic basis. The urine almost invariably is highly acid. Rendering the urine alkaline by medication has not been very successful. Moreover I have hesitated to give too large quantities of soda (for instance) lest the kidneys be injured. Should alkaline medication be useful and if so what form would be least harmful to the kidney? I need hardly say that these people are entirely unable to secure high priced concentrated vitamins to help out their diet.

WILLIAM L. NUTE, M.D. Talas, Turkey

ANSWER—It seems difficult to try to reconstruct a diet along normal lines when the subjects cannot obtain the food constituents of a normal diet. Large quantities of soda or any other alkali should not be given indefinitely, but there is no reason why a moderate amount of any type of alkaline medication would be harmful.

DEPILATORIES AND SHAVING

To the Editor—I am troubled with a heavy and rapidly growing black beard. I usually shave around 7 o'clock in the morning and by 1 o'clock that afternoon it is hard to tell that I have ever shaved. Isn't there some form of depilatory that I could use on my face that would be non-irritating? Shaving twice a day is too irritating and I have not been able to find anything in the literature to help me in the form of a depilatory or beard retarder. Kindly omit name.

M. D. Georgia

ANSWER—There is no depilatory less irritating than shaving.

STRENGTH OF MERCURIC OXYCYANIDE SOLUTION FOR CONJUNCTIVITIS

To the Editor—Please state the strength of mercuric oxycyanide solution usually employed in the eye for conjunctivitis. Kindly omit name.

M. D. Illinois

ANSWER—1:5000 aqueous solution.

SULPHUR OINTMENT FOR SCABIES

To the Editor—Often I am in need of a scabicide for my charity patients. Please advise me of the cheapest preparation I can keep on hand to use with this class of patients. There are good scabicides on the market but they are too expensive for the average patient. Please omit name and address.

M. D. South Carolina

ANSWER—Sulphur ointment, U. S. P.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY *Written*
Boston Chicago Cleveland New York Philadelphia St Louis and San
Francisco Oct 28 *Oral* New York Dec 15 16 Sec Dr C Guy
Lane 416 Marlboro St Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY *Written (Group
B Candidates)* The examinations will be held in various cities of the
United States and Canada Dec 9 Application necessary before Nov 1
Sec Dr Paul Titus 1015 Highland Bldg, Pittsburgh

ARKANSAS *Basic Science* Little Rock Nov 6 Sec Mr Louis E
Gebauer 701 Main St Little Rock *Removal* Little Rock Nov 14
Sec, Dr A S Buchanan Prescott *Homoeopathic* Little Rock Nov
14 Sec Dr Allison A Pringle Eureka Springs *Eclectic* Little
Rock Nov 14 Sec Dr L L Marshall 401 W 3d St Little Rock
CONNECTICUT *Regular* Hartford Nov 14 15 *Endorsement* Hart
ford Nov 28 Sec Dr Thomas P Murdock 147 W Main St,
Meriden *Homoeopathic* New Haven, Nov 14 Sec, Dr Edwin C M
Hall 82 Grand Ave New Haven

FLORIDA Jacksonville, Nov 13 14 Sec Dr William M Rowlett
Box 786 Tampa

MAINE Portland Nov 14 15 Sec Dr Adam P Leighton Jr
192 State St Portland

MASSACHUSETTS Boston, Nov 14 16 Sec Dr Stephen Rushmore
144 State House Boston

NEBRASKA Lincoln Nov 22 24 Director Bureau of Examining
Boards Mrs Clark Perkins State House Lincoln

NEVADA Carson City Nov 6 Sec Dr Edward E Hamer Carson
City

SOUTH CAROLINA Nov 14 Sec Dr A Earle Boozer 505 Saluda
Ave Columbia

WEST VIRGINIA Morgantown Nov 16 18 State Health Commis
sioner Dr Arthur E McClue Charleston

Maine July Report

Dr Adam P Leighton, Jr, secretary, Maine Board of Regis-
tration of Medicine, reports the written examination held at
Augusta, July 5-6, 1933 The examination covered 10 subjects
and included 100 questions An average of 75 per cent was
required to pass Fourteen candidates were examined, all of
whom passed Nine physicians were licensed by reciprocity
The following colleges were represented

College	PASSED	Year Grad	Number Passed
Boston University School of Medicine	(1932)	(1933) 4	5
Harvard University Medical School	(1931) (1932)	(1933)*	3
Tufts College Medical School	(1931) (1932)	(1933)	3
Cornell University Medical College		(1933)	1
Hahnemann Medical College and Hosp of Philadelphia		(1932)	1
McGill University Faculty of Medicine		(1930)	1

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Johns Hopkins University School of Medicine	(1931)	(1932)	Maryland
Maryland Medical College		(1910)	Ienna
(1912) New Hampshire			
Tufts College Medical School		(1930)	New Jersey
Albany Medical College		(1916)	Ohio
Columbia Univ College of Physicians and Surgeons		(1911)	New York
(1921) District of Columbia			
University of Pennsylvania School of Medicine		(1930)	Vermont
* License withheld			

Louisiana June Report

Dr Roy B Harrison, secretary, Louisiana State Board of
Medical Examiners, reports the written and practical examina-
tion held in New Orleans June 8-10, 1933 The examination
covered 12 subjects and included 100 questions An average of
75 per cent was required to pass Ninety candidates were
examined, all of whom passed Eight physicians were licensed
by reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine		(1932)	78.6
Louisiana State University Medical Center		(1933)*	83.2
83.7 85 85.8 86 86.1 86.3 86.4 87 87.1 87.3 87.5 87.8 88.2 88.6 88.9 88.9 89 89.6 89.9 90.8			
91			
Tulane University of Louisiana School of Medicine		(1931)	84.2
(1932) 85.1 (1933) 80 80.4 80.7 81.6 81.7 81.8 82 82.1 82.1 82.2 82.4 82.8 82.8 82.9 82.9 83 83.1 83.2 83.2 83.3 83.9 83.9 83.9 84 84.2 84.2 84.2 84.4 84.4 84.4 84.6 84.7 84.9 84.9 85.1 85.4 85.4 85.4 85.6 85.8 85.8 85.9 86 86.6 86.8 87.1 87.3 87.6 87.7 87.7 88 88.2 88.3 88.4 88.4			
Creighton University School of Medicine		(1932)	84.8
University of Cincinnati College of Medicine		(1929)	86.8
University of Oklahoma School of Medicine		(1929)	86.8
University of Pennsylvania School of Medicine		(1928)	87.3
McHarr Medical College		(1932)	87.3
University of Toronto Faculty of Medicine		(1931)	89.1†
Universidad Nacional Facultad de Medicina Mexico		(1932)	82.1

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
State University of Iowa College of Medicine		(1923)	Iowa
University of Georgia Medical Department		(1927)	Georgia
Tulane University of Louisiana School of Medicine		(1931)	Alabama
Johns Hopkins University School of Medicine (1924)		(1929)	Maryland
University of Maryland School of Medicine		(1906)	N Carolina
University of Michigan Medical School		(1929)	Michigan
Vanderbilt University School of Medicine		(1929)	Tennessee
* These applicants have completed their medical course and will receive their M D degree and Louisiana license on completion of internship			
† License withheld pending completion of citizenship			
‡ Average grade not reported			

Book Notices

The Principles and Practice of Otology By T W Watkyn Thomas
FRCS B Ch Surgeon Central London Throat Nose and Ear Hospital
and A Lowndes Yates MC MD FRCS Honorary Assistant Sur-
geon Ear and Throat Department Prince of Wales Hospital Cloth
Temporary price \$6.25 Pp 555 with 199 illustrations Baltimore
William Wood & Company 1933

Otologists will enjoy reading this book The text embraces
the individual ideas of each of the authors The section on
surgical anatomy of the ear is excellent The illustrations are
largely different from those of the familiar treatises They
are derived chiefly from the works of J E Frazer and from
Corning There is an excellent chapter on the ear and balance,
and a good presentation of the subjects of hearing and the tests
of hearing One could, if so minded, find things to complain
of There are mistakes, such as the discussion of ligation of
the external jugular vein when the internal jugular vein is
meant References to the literature follow each chapter Many
of them are of abstracts published in English journals Were
the references to the original article included, much time would
be saved for one pursuing information The authors adopt the
method of testing hearing advocated by the Hearing Test
Committee of the Royal Society of Medicine It is a unitary
system depending on the determination of the half intensity
period of the tuning forks used In this country a similar
method has been advocated by Harvey Fletcher, using in the
calculation the constant of damping or decrement of each fork
as determined by the Bureau of Standards All these methods
lead to increased accuracy in the testing of hearing defects,
but it seems highly desirable that some one method be adopted
and used universally by otologists One can also question the
importance of local measures in the treatment of many types of
progressive deafness However, these complaints are minor
when one considers the fresh point of view, the excellent and
unfamiliar illustrations and the large amount of valuable infor-
mation in a relatively compact work Every English-speaking
otologist should possess this book, from the use of which he
will derive much pleasure and benefit

Précis d'anatomie pathologique Par Gustave Roussy professeur à la
Faculté de médecine de Paris Roger Leroux professeur agrégé à la
Faculté de médecine de Paris et Charles Oberling professeur agrégé à la
Faculté de médecine de Paris In two volumes Cloth Price 175
francs per set 1p 1314 with 586 illustrations Paris Masson & Cie
1933

In the past century, few authoritative textbooks or treatises
on pathologic anatomy have been published or edited by French
authors The modern student of this subject has been com-
pelled to consult books written in German or English The
present work therefore marks a noteworthy contribution to
French medical publications Professor Roussy who has been
head of the department of pathology in the University of Paris
since 1910 and his assistants have collaborated to produce one
of the best treatises on pathologic anatomy published in any
language The two volumes are divided into eight sections
The first two sections consider the fundamental lesions of
tissues of human beings and the circulatory disturbances The
third and fourth sections deal with inflammation in general
and the inflammatory conditions in the special organs The
last four sections are concerned with the general and special
details of new growths The attempt to include all diseases
under the three headings of circulatory, inflammatory or neo-
plastic lesions encounters noteworthy difficulties For example,
there is an almost total absence of consideration of develop-
mental anomalies or defects Certain diseases, such as diabetes,
hypertension, vitamin disturbances and endocrine disturbances,

can hardly be treated adequately under any of these three headings. Of necessity there is considerable duplication, but the discussion under paragraph headings is clearly outlined and simply arranged.

The pathologic changes of thrombosis, inflammation, tuberculosis, tissues of the nervous system and carcinoma have been given particularly thorough review. Under "inflammation" the authors conclude their discussion (p 250) of its significance by this strictly scientific statement: "Inflammation presents itself, just as all other biologic phenomena, as a series of causes and effects. These actions and reactions without doubt are controlled by definite laws. It is these laws and not their philosophic interpretation which the biologist must recognize." As a rule their point of view is orthodox according to the modern teachings of pathologic anatomy, but a few exceptions may be noted. For example, functional hypertrophy of striated muscles is said to result from both division and increase in size of the fibers (p 488). In the discussion of the etiology of cirrhosis of the liver (p 808), alcohol is still given a primary place. Germinal centers are mentioned in lymph nodes, with no intimation of any other significance they may possess. Gastric mucus is believed to differ from intestinal mucus in that it does not stain with mucicarmine (p 575). In the discussion of colitis (p 938) there is no mention of the chronic ulcerative colitis caused by the diplococcus described by Bargen.

Few actual errors have been overlooked. The Greek word from which cirrhosis is derived is translated (p 802) as meaning "red" (roux) instead of its real meaning, "tawny yellow." The one reference to any medical work is to that of Laennec (p 806) and the year of publication is given as 1927. The principal defect is the lack of references to the literature. Various names of individuals are placed in parenthesis after certain facts or theories have been stated but there is no indication as to where their publications may be found. As would be expected, a large number of these are French writers, but German, English and American authors are also freely mentioned. The illustrations are really magnificent. Most of them are drawings, probably the best that any pathologic anatomy up to the present time has been able to produce. This is especially true of the splendidly accurate pictures of histologic lesions. They are abundant and extremely well chosen. The paper on which the book is printed is of good quality. Certainly these two volumes will take their place as worthy examples of the many medical classics produced by French authors and sponsored by French publishers.

The Biochemistry of Medicine By A. T. Cameron M.A. D.Sc. F.R.C. Professor of Biochemistry, Faculty of Medicine, University of Manitoba and C. R. Gilmour M.D. M.R.C.P. Professor of Medicine and Clinical Medicine, University of Manitoba. Cloth. Temporary price \$5.50. Pp. 506 with 31 illustrations. Baltimore: William Wood & Company, 1933.

Here is a book that contains the medicine one would like to find in a textbook on physiologic chemistry and that contains, more particularly, just the amount of chemistry and no more, that one would like to find in a clinical textbook. The result is a pleasant, palatable and painless dose of chemical information for the progressive practitioner. The authors designed the book for the student of medicine receiving clinical instruction in the later years of his course, and for the physician who at school received little or no special instruction in the medical application of biochemistry. A large proportion of the current medical literature concerns itself with biochemical studies in the presence of disease, a comprehension of which is necessary for him who would keep abreast of modern scientific advances. The authors have kept their promise to express the chemical point of view as simply as possible. The book is in no sense a manual of practical clinical chemistry but a work that should enable the physician to coordinate biochemistry and clinical medicine for the solution of everyday problems of practice. In the first chapter, of twenty pages, is compressed an outline of human biochemistry. Other chapters are devoted to the normal and abnormal metabolism of carbohydrates, fats, proteins, water, inorganic compounds and ions. Still other chapters deal with respiration and respiratory disorders, the organic compounds of the blood, their function and the diseases associated with them, the endocrine secretions, vitamins and vitamin deficiency diseases, and lastly, notes on the biochemistry of a group of unrelated conditions, such as the toxemias of pregnancy, burns

and poisons, hypertension, tuberculosis and tumor. At the end of each chapter is a summary and an ample list of the pertinent references from recent literature. An improvement would be a handy outline of normal values for the various blood chemicals discussed. By relegating chemical formulas and details of laboratory technique to footnotes, the authors have returned for the work the character of being primarily a clinical textbook. The subject index bears out, even more than the table of contents, the book's right to be so classed. At least a third of its more than 500 indexed subjects are conditions of disease. Comprehensive, yet concise, the book's subtitle might almost be "the biochemistry of medicine made easy", at least it is made easy reading.

Diseases of Infancy and Childhood By Leonard G. Parsons M.D. F.R.C.I. Professor of Diseases of Children in the University of Birmingham and Seymour Barling, M.C. F.R.C.S. Professor of Surgery in the University of Birmingham, Birmingham, England. In two volumes. Cloth. Price \$25 per set. Pp. 1798 with illustrations. New York & London: Oxford University Press, 1933.

The scope of this work is rather ambitious, as it attempts to cover in two volumes the medical as well as the surgical aspects of the diseases of infancy and childhood. The authors have attempted to delete all tedious and wordy discussions, but in a book of this type it is difficult to maintain the proper balance of subjects. The editors have succeeded fairly well, considering their task. The contributors have been carefully selected and are well qualified to write on their respective subjects. A few Canadian and American pediatricians appear in the list of contributors. E. A. Park and Martha Eliot have written the chapter on rickets and Shipley covers the chapter on scurvy. The list of English contributors is impressive, and only a few of the better known men are omitted. The discussions for the most part are direct and concise. When disease processes are discussed, only such basic principles are included as will elucidate the subject under consideration. There is an attempt to cover the subject from a clinical standpoint as much as is possible. The preventive as well as the curative aspect of pediatrics is considered. Diagnosis and treatment is stressed throughout the text. Most of the subjects are adequately covered in a concise manner. The prospective purchaser might assume that because the work appears in two volumes the various subjects are covered in greater detail than in a single volume. The greater length of the work is undoubtedly due to the fact that the surgical disorders of infancy and childhood receive the same thorough but concise treatment as the medical conditions with which they are associated. This applies to surgery of the eye and ear as well as to orthopedic and general surgery. This work is notably free from antiquated data. The text shows the mark of careful editing and organization. The illustrations are clear but appear inadequate in some sections of the book. The reproductions of roentgenograms are particularly commendable and are the best that have appeared in a pediatric textbook. After each discussion a few well chosen references are given so that the reader may amplify the information if he so desires. The book will be of special value to clinicians as a concise and modern reference work on practically all the aspects of diseases of infancy and childhood. It is not a complete system on pediatrics but may serve a useful purpose as it is presented.

The Mode of Action of Drugs on Cells By A. J. Clark B.A. M.D. F.R.C.P. Professor of Materia Medica in the University of Edinburgh. Cloth. Price \$6.25. Pp. 298 with 62 illustrations. Baltimore: Williams & Wilkins Company, 1933.

In this volume Dr. Clark has collected and summarized the available data bearing on the fundamental problem of pharmacology, namely, the nature of the reaction between the drug molecule and the cell. This problem is not alone the most fundamental but is also still the most elusive and poorly understood in the whole field of drug research. The author's approach to an understanding is through the methods of quantitative pharmacology and statistical analyses of the results obtained. Some of the methods employed are: (1) micro-injection experiments, (2) quantitative estimates of drugs fixed on cell surfaces and entering the cells, (3) measurements of the rate of action of drugs, (4) measurements of the rate of wash-out of drugs, and (5) experiments showing the existence of active patches or receptors on the cell surface. The question of individual variation and its relation to drug action and idio-

synchysis is discussed. The skewing of normal characteristic curves relating to drug dosage and response is explained on this basis, it would thus be more correct in certain types of bio-assay to express asymmetrical deviation as $+10-5$ instead of ± 5 . Various theories regarding the mode of action of hormones, vitamins and drugs are presented and analyzed in the light of existing data. It is shown that although certain drugs may be said to act by adsorption, or differential solubility, nevertheless the exact nature of the chemical reactions involved is far from being understood and that all the existing theories are inadequate in several respects. The influence of radiations, including heat, on living cells and the drug action thereon, is discussed in some detail. The material is presented in an interesting and readable manner and can be recommended as a brief survey of a detailed and difficult field. The extensive bibliography that follows each section makes the volume a valuable reference book, especially to the experimental pharmacologist.

Atlas der klinischen Elektrokardiographie mit Anleitungen zur Differentialdiagnose. Von Dr. Wilhelm Dressler, Assistent der Herzstation in Wien. Paper. Price 14 marks. Pp. 112 with 134 illustrations. Berlin: Urban & Schwarzenberg, 1933.

This collection of electrocardiograms is intended for the specialist already familiar with the elements of electrocardiography. It endeavors to show several curves of each of the various types of myocardial damage and arrhythmias. The electrocardiograms are placed on the page opposite their description thereby permitting the reader to interpret the electrocardiograms himself before reading the author's evaluation. No attempt is made to explain in detail the cause of the various changes seen or the mechanism of the various arrhythmias. The legends are complete and contain, when essential, a brief clinical report of the case. The author also outlines the manner in which the electrocardiographic diagnosis is arrived at. In making the electrocardiographic diagnosis, emphasis is placed on certain simple tests such as exercise and carotid sinus pressure. A differential diagnostic index is appended. The method of analyzing the arrhythmias is excellent and complete. Stress is laid, however, on the more unusual types of arrhythmias. The author still uses the classic terminology in bundle branch block and attempts to localize ventricular extrasystoles, procedures that are not generally followed today. The illustrations of electrocardiograms in coronary occlusion are not as typical as might have been used, and the author fails to make clear that in many of these curves the electrocardiographic diagnosis of coronary occlusion is made on the basis of the clinical history, which is not the usual procedure. Most authorities would consider one of the curves used to show right axis shift to be normal in configuration. But these are minor criticisms compared to the splendid handling of the majority of the electrocardiograms. This book can be highly recommended for the cardiologist wishing practice in interpreting the more unusual arrhythmias.

The Dynamics of Therapy in a Controlled Relationship. By Jessie Taft. Cloth. Price \$2.50. Pp. 296. New York: Macmillan Company, 1933.

For obscurity of diction this book might easily take a prize. To quote the author verbatim (p. 288): "Relationship therapy, then is nothing but an opportunity to experience more completely than is ordinarily possible the direction, depth, and ambivalence of the impulses which relate the self to the other, to outer reality, and to discover first-hand the possibility of their organization into an autonomous creative will." Or this:

The therapist who agrees to live for this limited time in the interest of his patient who gives up temporarily the projection of personal needs and impulses in order to allow the patient to work through his own unmolested provides an opportunity which is unique and irresistible in that it permits a realization of wholeness and security as part of a protecting supporting medium like nothing in human experience unless it be the intra-uterine existence. Many patients realize in this relationship for the first time a kind of cosmic ecstasy far beyond the sexual like that which the mystics describe as oneness with life, an harmonious flowing into reality. The body of the book is occupied by the verbatim record of two problem children: a seven year old boy and a seven year old girl whose problems she helps partially to solve by tactics that nurse

maids have discovered long ago, letting the youngster believe it is having its own way and then checking it when it goes too far. That there is something in this kind of therapeutic relationship cannot be denied, but the author has neither discovered it nor clarified its dynamics, unless one considers "a sense of wholeness and security like that experienced in intra-uterine existence" an elucidation.

Operative Surgery. By Alexander Miles, M.D., LL.D., F.R.C.S., Consulting Surgeon, Royal Infirmary, Edinburgh, and D. P. D. Wille, M.D., F.R.C.S., Professor of Surgery, University of Edinburgh. Cloth. Price \$5.25. Pp. 590 with 321 illustrations. New York & London: Oxford University Press, 1933.

The authors have covered the subject in more than a satisfactory manner. Of course, operative surgery is so extensive and the technics so varied that a good deal of condensation had to be done and the book cannot be called absolutely complete. Yet it fulfils the purpose for which it was written—to serve "as a guide to undergraduates in their class of operative surgery, and in the hospital, and to young graduates in their practice." The plan of the work is that usually followed in textbooks of this type. The first nine chapters deal with the surgical principles and operations pertaining to tissues in general, such as the blood vessels, lymph glands, peripheral nerves, bones and joints. The remaining twenty-five chapters discuss the technic of operations on the various organs of the body, including those of the face, mouth and air passages, with the exception of the female generative tract. An interesting and valuable feature of the volume is the short section on the surgical anatomy of the subject subsequently discussed, which is placed at the beginning of almost every chapter. The work is concise and excellently written. The material is well selected, clearly illustrated and practical. Because of lack of space, the methods selected for description are those most favored by the authors and their collaborators, and of course represent present-day practice in the Edinburgh school.

La tuberculose du lobe azygos. Par B. Le Bourdellès, professeur agrégé du Val de Grâce et J. Jalet. Bibliothèque de phthisiologie sous la direction de Léon Bernard, professeur de clinique de la tuberculose à la Faculté de médecine de Paris. Paper. Price 40 francs. Pp. 159 with 70 illustrations. Paris: Masson & Cie, 1933.

This describes the supernumerary pulmonary lobes and the accompanying roentgenographic changes in health and disease. Accepting Aebi's definition, the authors hold that a lobe is that part of the lung extending to the pleura and depending on one or more primary bronchi and separated from other lobes by a pulmonary fissure. The azygos lobe is therefore not a true lobe like the cardiac and posterior middle lobes. The history of the development of knowledge of the azygos lobe, from its first description by Wrisberg in 1778 is fully given as well as its embryologic development, dependent on a higher entrance than normally of the azygos vein into the vena cava, which forces the pulmonary buds to grow around instead of pushing the vein to one side. The vein then comes to lie at the bottom of a fissure with the surfaces separated by two layers of visceral and two of parietal pleura ending at a point in the true interlobar fissure. The resulting azygos lobe may be large when the curved fissure is more horizontal or small when more nearly vertical. At a point near the apex the pleura is thickened in a falciform manner, which explains the triangular shadow there. The hairlike line concave to the left curves down toward the hilus and ends in a sharply defined comma-like shadow. The small twisted bronchus supplying the lobe favors the development of atelectasis. The lobe is stated to be present in 0.5 per cent of roentgenograms of the chest. Details variations and technic are thoroughly discussed. When a tuberculous process involves the right upper lobe, the azygos lobe may escape or it alone may be involved. Pleurisy with or without effusion may involve only the fissure. In artificial pneumothorax the fissure may be inflated with air. Excellent illustrations make these points clear. In a final chapter tuberculosis in other supernumerary lobes is discussed. The lobe of Rokitan'sky, a small isolated mass of fetal or atelectatic lung tissue completely isolated or attached to the left lower lobe occasionally situated extrathoracically is rare. The cardiac lobe, a portion of the lower lobe usually on the right is more common. Its fissure more clearly revealed by special technic extends as an extremely fine line from the hilus to the diaphragm. Tuberculosis may involve this lobe and

the remainder of the lower lobe escapes. The occurrence of bronchiectasis and telecystasis of this lobe is not stressed. One case of tuberculosis of the left azygos lobe is reported and attention called to the manner in which it differs from the right. The volume can be recommended to all students of roentgenography and tuberculosis.

Broadcasting Health. By J. Mace Adress, Ph.D. and I. H. Goldberger, M.D. Assistant Director of Health Education, New York City Public Schools. The Story Series in Health. Cloth. Price 80 cents. Pp. 401 with illustrations. Chicago: Glinn & Company, 1933.

The purpose of this volume is to provide pupils in the grades with an elementary survey of the field of nutrition and with special suggestions on training in wholesome attitudes on foods and food habits. There is, of course, far more to health than merely nutrition, but present-day methods have concentrated on nutrition in health teaching in the public schools. The volume begins with a simple statement concerning energy and its development. It covers all the current knowledge concerning water, air, minerals, the vitamins and then the specific food substances. It discusses the place of alcohol, tobacco, coffee, tea and condiments in the ordinary diet, much of the material being brought out by the conversational method. Most of the points of view are distinctly rational. The book is copiously illustrated with well selected photographs and includes also a glossary of definition and pronunciation of medical terms.

Die weiblichen Sexualhormone in ihren Beziehungen zum Genitalzyklus und zum Hypophysenvorderlappen. Von Dr. C. Clauber, Privatdozent an der Universitäts-Frauenklinik Königsberg. I. Pp. Paper. Price 22 marks. Pp. 191 with 103 illustrations. Berlin: Julius Springer, 1933.

The author divides his discussion of the field of the female sex hormones into several sections: (1) the histology and physiology of the genital cycles of the laboratory animals and man, (2) the follicular hormone, (3) the corpus luteum hormone, (4) the relationship of the follicular and luteal hormones, (5) the relationship of the ovarian hormones and hormone of the anterior lobe of the hypophysis, (6) and the hormonal diagnosis of pregnancy and chorion epithelioma. The book is profusely illustrated, mainly from the author's own experiments. Interesting ideas regarding the relationship of the sex hormones are advanced. The effects of hypersecretion of the follicular hormone and the hyposecretion of the luteal hormone are discussed. The author has spent much time investigating the corpus luteum hormone. This section of his book appears to be much better than the others. The book cannot be recommended to readers who wish to obtain an accurate picture of contributions of the various investigators of the female sex hormones. For example, though the discussion of the vaginal smear method of assay occupies six pages, Allen and Doisy, who introduced it, are not mentioned. Furthermore, the reference to that work is not given in the bibliography. Another error, equally glaring, is the failure to state that Doisy and his collaborators isolated the first crystalline follicular hormone. Many instances of this character could be given but it is hardly necessary.

A Text Book of Neuropathology. By Arthur Weil, M.D., Associate Professor of Neuropathology, Northwestern University Medical School, Chicago. Cloth. Price \$5. Pp. 335 with 260 illustrations. Philadelphia: Lea & Febiger, 1933.

This compact textbook discusses the pathology of the nervous system from a broad biologic standpoint and is to be commended for this, but a perusal of the book will convince one that the pathology of the nervous system is still largely histopathology. This phase of the subject is adequately and clearly presented in concise form suitable for students. The first chapter is valuable for one beginning the study of neuropathology. After four chapters on general neuropathology, the separate diseases are taken up briefly but adequately. The chapters on inflammations and intoxications are particularly to be commended. The chapter on tumors is adequate, in contrast to European books on the same subject. One should note that the appendix on staining methods is not meant to be a complete laboratory manual. The literary style is decidedly Germanic. It is a pity that neuropathology cannot be cleared of German words and phrases that are readily translated into English. This book can be heartily recommended as an authoritative introduction to its subject.

Les conjonctivites folliculaires. Rapport présenté au 46^e congrès de la Société Française d'Ophthalmologie, le 27 juin 1933. Par V. Morax. Société Française d'Ophthalmologie. Paper. 1 p. 142 with 22 illustrations. Paris: Masson & Cie, 1933.

The author defines follicular conjunctivitis as an inflammation of the ocular mucous membrane, characterized by hyperemia, lacrimation, secretion, and the formation of follicles in the transitional folds of the conjunctiva. That gave him a fairly wide latitude, on which he proceeded to elaborate with the thoroughness that has always been synonymous with the name of Morax. Some twenty odd pages are given over to the historical phase of the subject, followed by a nearly similar number of pages of clinical description. Particular emphasis is laid on the condition known as swimmers' conjunctivitis and the investigations of the etiologic factors of that disease. This, of course, leads into an elaborate discussion of the Prowaczek bodies and their relationship to inclusion blennorrhoea and to trachoma. Then follow the description and differential diagnosis of trachoma and the various other forms of follicular conjunctivitis. Treatment is dismissed with a disdainful gesture in one and a half pages. The conclusion is that there are four main types of follicular conjunctivitis: trachoma, swimmers' conjunctivitis, acute conjunctivitis with follicles, and chronic follicular conjunctivitis. An elaborate and complete bibliographic index completes this interesting brochure. The colored illustrations are somewhat better than fair, but the black and white ones are rather indifferent. The booklet represents an enormous amount of work, both clinical and literary, and is well worth the attention of the clinical ophthalmologist.

Le disque intervertébral. Physiologie, pathologie, indications thérapeutiques. Par C. Maurie, I. R. face de Pasteur, Valléry Brétot. Paper. Price 30 francs. Pp. 195 with 45 illustrations. Paris: Masson & Cie, 1933.

In this monograph the author presents the anatomy, embryology, physiology, pathology, radiologic aspects and therapeutic indications concerning the subject of intervertebral disks. The works of Luschka, Hueck, Schmorl and Junghans, Calve and Galland and Beale and others are reviewed. The illustrations are generally good, especially the pathologic sections. This is an important subject and has recently experienced a well deserved awakening of interest.

Internal Derangements of the Knee Joint. Their Pathology and Treatment by Modern Methods. By A. G. Timbrell Fisher, M.C., M.B., Ch.B., Surgeon (With Charge of Out Patients), Seamen's (Dreadnought) Hospital, Greenwich. Second edition. Cloth. Price \$3.50. Pp. 204 with 190 illustrations. New York: Macmillan Company, 1933.

This monograph is based on a careful clinical and experimental study of the internal derangements of the knee joint. Special emphasis is placed on the application of therapeutic measures founded on accurate knowledge of structure, function and disease. The value of manipulation and its place in the treatment particularly of injuries and adhesions are well discussed. The section on internal derangements due to damaged or diseased semilunar cartilages takes up a large part of the book and gives a comprehensive yet brief description. There is a short history of the subject of internal derangements and a brief discussion of the surgical anatomy, physiology and mode of production of the derangements of the knee joint. The pathology, symptoms, differential diagnosis and treatment are clearly described. Other varieties of internal derangement are outlined more as a summary of the author's experience and studies rather than in a detailed form. An appendix of notes by Sir Robert Jones is of especial interest because it is probably his last. The author is to be credited with a classic summary of his experience and for including only the essentials.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index 1933. Fifty First Year. Edited by Carey F. Coombs, M.D., F.R.C.P., and A. Rendle Short, M.D., B.S., B.Sc. Cloth. Price \$6. Pp. 72 with 159 illustrations. Baltimore: William Wood & Company, 1933.

This medical annual is now in its fifty-first year. It begins with a review of a year's work in therapy. It provides incidentally an obituary notice of Dr. Carey F. Coombs, who died this year and who was for fourteen years editor of this publication. The volume is contributed to by a great number of writers selected by the editors, all of them British and all of

them well known for work in the fields to which they contribute. It has a fine index and is fully illustrated with many plates, some of them in colors, most of them borrowed from current periodicals. The book constitutes a good reference work, particularly for those who want the latest word on any medical subject.

Inorganic Colloid Chemistry Volume I The Colloidal Elements By Harry Boyer Weiser Professor of Chemistry at The Rice Institute Cloth Price \$4.50 Pp 389 with 54 illustrations New York John Wiley & Sons Inc London Chapman & Hall Ltd 1933

This gives a good critical survey of the colloidal behavior of elements and their inorganic compounds with particular reference to their role in the development of colloid science. It is concerned primarily with the methods of formation, properties and application of the elements in the colloid state, which includes their uses or their tentative uses in medicine. The elements included are gold, silver, copper, mercury, alkalis and alkaline earths, lead and miscellaneous colloidal metals including antimony, the iron and platinum families and the nonmetallic elements carbon, sulphur, selenium, tellurium and iodine. The essentials of this part of colloid chemistry are presented in a clear, concise, accurate style, with numerous references to the literature. The therapeutic discussions, however, give one the impression of a chemist, with the will to believe, peering at medicine through the keyhole. The facts are that most of the reported benefits of colloidal therapy do not withstand reasonable criticism. The book is instructive and stimulating and it may be studied with profit by medical men without especial training in mathematics or chemistry.

Medicolegal

Malpractice Injury Attributed to Physician's Absence During Childbirth—The plaintiff employed the defendant to attend her in childbirth. When delivery seemed imminent he directed her to go to a hospital. He examined her there, about 10:30 o'clock, p. m., and concluded that the baby would not be delivered before the following day. After instructing the nurses and attendants to telephone to him at once if a change occurred, he went home. Shortly after midnight he received a call, but although he arrived at the hospital within about ten minutes the birth was already about completed. He assisted only in the last stages. The defendant attended to plaintiff while she was in the hospital and discharged her at the usual time. The plaintiff instituted her suit when, according to her testimony, she developed uterine trouble which she attributed to the defendant's failure to attend her during the entire time of her labor. The trial court directed a verdict in favor of the defendant, and the plaintiff appealed to the Court of Appeals of the District of Columbia. The evidence, said the Court of Appeals, discloses no testimony to show that the absence of the physician was the proximate cause of the plaintiff's trouble. There is testimony that her condition may have been caused by the childbirth, but there is no evidence to show that if the defendant had been present and exercised reasonable professional skill the result would or could have been different. The Court of Appeals affirmed the judgment of the court below.—*Bonner v Conklin (District of Columbia)*, 62 F (2d) 875

Insurance "Totally and Permanently Disabled" Construed—The defendant insurance company issued a policy by which it agreed that if the plaintiff should become disabled by bodily injury or disease so as to be permanently, wholly and continuously prevented from engaging in any occupation whatever for remuneration it would during the continuance of such disability waive the payment of the premium on the policy and pay the insured a stated monthly benefit. About June 27, 1929 the plaintiff became totally disabled. On October 19, the same year he presented to the defendant insurer proof of total and permanent disability dating back to June 30. When this proof was presented neither the plaintiff nor his physician knew how long disability would continue but on or about June 1, 1931 disability ceased and the plaintiff resumed the practice of his profession. The insurer refused to pay the benefits

promised by the policy, and the plaintiff brought suit, Oct. 1, 1931. It was conceded that during twenty-three months the plaintiff was totally disabled. The defendant contended, however, that the disability was not permanent, because it had ceased before the suit was commenced, and that therefore the plaintiff was not entitled to the agreed benefits.

The word "permanent," as used in this insurance contract, said the Supreme Court of Minnesota, is to be construed according to its nature and in relation to the subject matter of the contract. The insurer agreed to waive the payment of premiums and to make monthly payments "during the continuance of such disability," which does not indicate that the insurer meant that the disability must continue until the insured died. The policy authorized the insurer to demand of the insured from time to time new proof of continuing disability, and thus, the court believed, implied that the insurer contemplated that disability might terminate. As was said by the Supreme Court of Georgia in *Penn Mutual Life Ins Co v Milton*, 160 Ga 168, 127 S E 140, in construing an insurance policy similar to this one,

This language clearly indicates that the insurer meant that the total disability on proof of which it would grant the benefits named was not one which might last during the entire life of the insured but one which might end prior to his death.

We are of the opinion, said the Supreme Court of Minnesota, that the authorities support the conclusion that in insurance parlance, in such a policy as that now before us the words "totally and permanently disabled" contemplate a disability which reasonably satisfies a fair and impartial mind that the insured is then totally disabled and may reasonably be expected to continue in that condition for at least an indefinite period of time. If a person insured under such a policy has been totally disabled for sixty days and proves by competent evidence the nature and character of his disability and that it will probably continue, or may continue, for life, or that it may reasonably be expected to continue indefinitely, he is entitled to recover instalment payments as one who is totally and permanently disabled. Subsequent recovery, even before trial, does not destroy the insured's cause of action, though it does terminate the accrual of subsequent instalment payments under the policy.

The order of the court below, directing a verdict in favor of the defendant insurer, was reversed.—*Maze v Equitable Life Ins Co of Iowa (Minn)*, 246 N W 737

Workmen's Compensation Acts Compensability of Pneumonia—The industrial commission of Wisconsin awarded Hatfield an employee of the Yellow Cab Company, compensation under the workmen's compensation act, because it found that he had contracted pneumonia out of and incidental to his employment. The Yellow Cab Company appealed to the Supreme Court of Wisconsin. The expert medical testimony given before the industrial commission, said the Supreme Court, warranted the commission in finding that, although pneumonia germs are prevalent in the throats and noses of many normal persons, pneumonia does not result unless the germs invade the lungs and multiply there. This occurs from a lowering of resistance, which may be due to exposure, alcoholism and reduced vitality following an operation. The commission was warranted in finding also that the claimant's exposure was the logical cause of the lowering of his resistance, which caused the development of pneumonia. Clearly, the claimant's pneumonia was incidental and fairly traceable to his employment, he would not have been equally exposed to it apart from his employment. Likewise the chances of the growth of the pneumonia germs and of the resulting pneumonia were substantially increased by the services which he was obliged to render. The fact that such a hazard is incidental also to all similar outdoor activities is no reason for denying the claimant the benefits of the workmen's compensation act. The judgment of the lower court affirming the award, was therefore affirmed.—*Yellow Cab Co v Industrial Commission (Wis)*, 246 N W 689

Compensation of Physicians License a Prerequisite to Recovery of Compensation—Where the law requires a person who practices a profession, such as medicine or pharmacy, to obtain a license, one who practices without having obtained such a license cannot recover compensation for services so rendered.—*Horsley v Baker (Iowa)* 246 N W 653

Society Proceedings

COMING MEETINGS

American Society of Tropical Medicine Richmond Va Nov 15 17
Dr Henry E. Meleney Vanderbilt University School of Medicine
Nashville Tenn Secretary
Association of American Medical Colleges, Minneapolis Oct 30 Nov 1
Dr Fred C. Zapffe 5 South Wabash Avenue Chicago Secretary
Central Society for Clinical Research Chicago Nov 3 Dr Lawrence D.
Thompson 903 University Club Building St. Louis, Secretary
Inter State Postgraduate Medical Association of North America Cleveland
Oct 16 20 Dr W. B. Peck 12 1/2 East Stephenson Street Irapuato
Ill Managing Director
Medical and Surgical Association of the Southwest El Paso Texas
Dec 7 9 Dr W. Warner Watkins Box 1587 Phoenix Ariz
Secretary
Oregon State Medical Society Portland Oct 26 28 Dr Albert W.
Holman 364 Washington Street Portland Secretary
Pacific Coast Society of Obstetrics and Gynecology Portland Oregon
October 19 21 Dr Clarence A. DePuy 230 Grand Avenue Oakland
California Secretary
Southern Medical Association Richmond Va November 14 17 Mr
C. P. Loran Empire Building Birmingham Ala Secretary
Virginia Medical Society of Lynchburg Oct 24 26 Miss Agnes V.
Edwards 1200 East City Street, Richmond, Secretary
Western Surgical Association Cincinnati Dec 8 9 Dr Frank R.
Teachenor 306 East 12th Street Kansas City, Mo Secretary

SECOND CONFERENCE ON RHEUMATIC DISEASES

Held under Sponsorship of the American Committee for the Control of
Rheumatism Milwaukee June 12 1933

(Concluded from page 1184)

Nutritional Aspects of Chronic Arthritis

DR A. A. FLETCHER, Toronto There is little evidence of metabolic disease among arthritic patients. Almost all chemical studies give normal results. A few women with osteo arthritis seem to show an inherent tendency to become heavy, particularly after the menopause. Control of their weight is helpful, whether the disease is inflammatory or degenerative. A lowered metabolic rate occasionally contributes to increase in weight. In atrophic arthritis maintenance of weight is difficult, sometimes impossible. This tendency to loss of weight may be constitutional or may be associated with chronic infection or gastro-intestinal dysfunction. At times, a diet high in calories, and insulin seem useful. There is little evidence that disturbance in metabolism of uric acid occurs in arthritis independent of gout. It has been asserted that some patients with arthritis are sensitive to acid, but there is no chemical support for this statement, and it is doubtful whether the so called alkaline diets are based on any true metabolic principles. In the belief that the process in rheumatoid arthritis is an exudative one, restriction of salt and water has been advised by Straus, Berkhardt and Gerson in Germany, and by others. An allergic reaction to some food may be present in the occasional case.

There is experimental evidence that faulty nutrition, particularly during prenatal life and adolescence may lead to states of subnormal health conducive to disease in later life. In cases of atrophic arthritis, the frequently asthenic build, loss of weight, nervous instability, and tendency to premature aging might be considered nutritional phenomena. The motor disturbances of the gastro intestinal tract, atony, ptosis, and lack of haustral markings in the colon as seen in chronic arthritis may be due to deficiency of vitamin B and excess of carbohydrate. At times diets high in vitamin and low in carbohydrate will reestablish normal tonus of the bowel. Atony of the colon can be produced experimentally in rats with a fair degree of certainty with diets high in carbohydrate and low in vitamin B. The colon also becomes longer and the ileocecal valve markedly incompetent. The longer this condition persists, the more difficult it is to restore its tonus. In time such deficiency goes on to atrophy and metaplastic change in the mucous membrane.

The person who is disposed to, or who is suffering from rheumatoid arthritis must live a protected existence. Just as he is liable to fatigue, vulnerable to strain susceptible to infection and poorly adaptable to environment change so he does badly on diets of poor quality and does well on protective diets. At times the gastro-intestinal tract has a more immediate causal relationship to the disease such as in the arthritis of bacillary dysentery and of ulcerative colitis. Other conditions occur in the gastro-intestinal tract the significance of which

is not so well established disturbance in motility, the presence of nonspecific inflammatory conditions in the bowel, aberrations of intestinal flora and the presence of organisms productive not only of fermentation and putrefaction but of more invasive ones, such as hemolytic streptococci. There has been, in this country, much resistance to accepting the belief that such processes may play any part in the cause of arthritis. These intestinal disorders are seen among patients who do not have arthritis. Other factors must be necessary for the arthritis. Probably one of the essential factors is injury to the mucous membrane from an impaired nutritional state.

There is no agreement as to what measures are applicable for the treatment of deranged bacterial flora. Colonic irrigations, laxatives, rough diets, vaccines or the implantation of bacteria are extensively used, at times with relief. Foul stools indicative of proteolysis in the bowel, may be grounds for short periods of restriction of protein. More often the history suggests a fermentative process, such as production of gas, and relief is obtained by restriction of carbohydrate or cellulose. Short periods of dietetic restriction, and the use of rough diets or of smooth diets, all serve to cater to disturbed gastro intestinal function, but in their use it must be remembered that the optimal state of the patient's nutritional health should not be impaired by such measures. Clinical and experimental evidence suggests that this may be maintained and that for weeks or months material improvement in the general health of arthritic patients occurs with a diet high in all vitamins, low in carbohydrates, moderate although adequate in protein of good biologic value and moderate in total calories.

DISCUSSION

DR T. PRESTON WHITE, Charlotte, N. C. Our patients seem to do much better on a diet low in carbohydrates and high in vitamins, but close attention must be paid to intestinal elimination for poor elimination is evidently a large factor in keeping up arthritis. We attempt to restore the patient's weight to normal. At times we disregard all diets, feeling that the patient must first be restored to normal health.

DR R. GARFIELD SNYDER, New York. Our experiments with feeding of vitamin B have not produced the clinical results or roentgenologic appearance noted by Dr Fletcher. My associates and I have used wheat germ in the forms advocated by him and have encouraged patients to take them in as large quantities as possible for periods varying from two to eight weeks. In about fifty cases the results were disappointing clinically and roentgenologically. Definite clinical improvement, either in the form of improved intestinal elimination or decreased pain in the joints, did not occur either during or following the period of feeding of vitamin B. Roentgenologically the changes in the colon described by Dr Fletcher could not be demonstrated. The colons of these patients did not reveal any distinctive changes in size, configuration, tonicity, haustration or position. Generally the bowel looked the same before and after the period of feeding of vitamin B. In a small number of cases the colon appeared to be of wider lumen, more atonic, of greater redundancy, and to be more ptotic than before the experiment was begun. I believe that these changes are extrinsic, transitory and not necessarily indicative of intestinal injury. Is it not possible that Dr Fletcher's interpretation of intestinal improvement following feeding of vitamin B is due to changes in the appearance of the bowel produced by variations of roentgenologic technique rather than to intrinsic changes in the colon? In some of these cases we give colonic irrigations twice a week. Colonic irrigations given over a period of years do not produce any deleterious changes in the colon demonstrable roentgenologically.

DR W. J. KERR, San Francisco. Drs Rinehart and Mettler recently attempted to produce chronic scurvy in guinea pigs by giving foods deficient in vitamin C. They found infiltrations of cells in the valves of the heart and in many tissues of the body presumably similar to Aschoff bodies. This work should be repeated and if confirmed may alter ideas concerning the etiology of rheumatism. Rheumatic diseases recur, are affected by climate and may be related to inability to obtain proper vitamins in winter months.

DR M. H. DAWSON, New York. Has Dr Fletcher had any experience with diets high in carbohydrate in rheumatoid

arthritis? We have recently employed such a dietary regimen in a number of cases, with rather marked improvement.

DR A A FLITCHER, Toronto Many factors influence the tonus and shape of the colon. Observations regarding the influence of diet should be made under careful control. Dr Snyder had his patients under a prolonged course of treatment with enemas, and his observations are thus open to criticism. I have recently observed a case in which vitamin B, given intramuscularly, brought about rapid improvement in tonus, and there seems to be no doubt that at times, clinically, variations in the vitamin B content of the diet, and the balance of the diet, are the most important factors in changing the shape of the colon. Sometimes an arthritic patient may improve with almost any abrupt change in diet. Diets high in carbohydrate especially if given with injections of insulin to a patient who is much underweight, will result in increased strength and weight and in this way will increase resistance to infection. Such a diet should not be allowed to become inadequate in any other food factor.

Contusion of Cartilage as an Etiologic Factor in Chronic Arthritis

DR J ALBERT KEY, St Louis Contusions of the articular cartilage may heal without symptoms or may lead to the development of chronic arthritis in the injured joint. When the latter occurs, the degenerating cartilage should be excised. I have recently done this in two cases. The first case was that of a young man who struck his right knee on a beam. Severe pain and swelling resulted, which subsided under treatment, but the joint often became stiff and, on overexertion, sore and swollen. There was no sensation of catching or locking in the joint. The knee was slightly thickened and tender to pressure just lateral to the patellar ligament. On flexion, maximal tenderness appeared to be proximal to the external semilunar cartilage. The roentgenogram was negative. A diagnosis was made of traumatic arthritis of the left knee, with contusion of the articular cartilage of the external condyle of the femur. On exploration the diagnosis was confirmed and the injured necrotic cartilage, about 2 cm in diameter, was removed. The clinical result was satisfactory. Similar cases have been reported by Budinger, Ludloff, Axhausen and Lawen. I have been able to produce arthritis by resecting a rectangle of cartilage in rabbits, but not in cats, and only occasionally in dogs. Apparently, in patients, the defect in cartilage created by surgical excision heals with a fibrous or cartilaginous base and does not tend to produce progressive arthritis.

DISCUSSION

DR JAMES A DICKSON, Cleveland In examining a knee after injury it is likely that the possibility of injury to articular cartilage will be ignored. If examination discloses that the ligaments are intact and that the semilunar cartilage is not injured it is likely that the use of bandages, protection and physical therapy will be continued indefinitely. Dr Key has demonstrated the fallacy of such an attitude and the importance of consideration of the possible production of osteochondritis dissecans. In cases in which symptoms persist, and it is possible to demonstrate roentgenologically the typical picture of osteochondritis dissecans, I do not hesitate to remove the loose cartilage. Results have been uniformly gratifying. Roentgenologic observations must not be depended on entirely to determine whether exploration is indicated. Exploration should be made more often in cases of posttraumatic disturbance of joints with persistent symptoms. No harm is done thereby, and undoubtedly a great deal of time often is saved and a more satisfactory result obtained. A thorough examination of the condyles should be made whenever the semilunar cartilage of the knee is being explored. Osteochondritis dissecans without roentgenologic signs is undoubtedly more frequently present than is usually believed and if this condition should be kept in mind in studying posttraumatic symptoms referable to joints undoubtedly many more cases would be revealed than are diagnosed at present. When the diagnosis is made, the patients respond excellently to treatment.

DR R K GHORULEY, Rochester, Minn. The amount of trauma that may occur to cartilage from daily activities is not realized. Certainly strain of the back and strain of other joints will produce changes concerning which physicians have no con-

ception unless the joints are taken out and examined, which, of course, is not often done. Fibrillation has been found in many joints. In chronic flatfoot the same fibrillation of the cartilage is seen.

DR J A KEY, St Louis I was not referring to osteochondritis dissecans because I do remove the loose bodies from such joints when there is no marked arthritis. Two patients may suffer almost exactly the same injury, but one will develop chronic, progressive arthritis and the other will have no trouble with the joint. There must be differences in reaction to injury that determine the course of events after trauma.

The Treatment of Chronic Arthritis

DR W J KERR, San Francisco The common denominator in most methods of treatment that are reputed to be of value is the exhibition of improved circulation in the affected joint, whether this is brought about by local or by general measures. Methods that improve circulation are useful in both proliferative and degenerative arthritis.

The local measures of value are of several types: (1) the use of counterirritant agents and methods, such as liniments, salicylates, blisters, cupping, cautery, ultraviolet rays, constrictive hyperemia and other ways of producing local hyperemia from stasis, (2) wet or dry heat as applied by water, mud baths, infra-red radiation, diathermy and other methods, (3) cold in the form of cold baths, showers, douches and exposure to cold or bracing air, such as is employed in the open air treatment of tuberculosis of a joint, (4) sympathectomy or ramiectomy to relieve the vasoconstrictor tonus of an extremity, and (5) radiotherapy of sympathetic ganglions.

The general measures used to improve the circulation of a joint are: (1) general exercise, (2) increased intake of water, which may affect the volume of blood in circulation, (3) the use of vitamin C, which may tend to restore injured capillaries of those whose diet has been deficient in this respect, (4) administration of thyroid extract, which may increase the peripheral flow of blood, (5) use of foreign protein in the form of vaccines, peptones, serums and other foreign substances, which may produce so-called protein shock which results in temporary or more prolonged improvement in peripheral circulation, (6) general use of heat by changing the patient's residence to a warmer climate, by applying radiant heat in cabinets, by use of hot baths, by applications of short waves (pyrotherapy), (7) anesthesia, (8) removal of foci of infection, and (9) other operations which may give temporary benefit to the patient by the exhibition of protein shock.

DISCUSSION

DR M F LAUTMAN, Hot Springs, Ark. Heat is often indiscriminately applied, and much of the disrepute that it has met is due to the fact that a physician tells his patient to go home and take baths as hot as he can stand. The patient goes home and sits in a tub of hot water until he becomes weak and exhausted. Consequently, he is not benefited. Hydrotherapy properly applied with the understanding that there is an optimal temperature which every patient can tolerate to his advantage, is one of the safest and best methods that can be used to improve both articular and general circulation.

DR L T SWAIM, Boston At what time in the stage of arthritis is exercise of the joint indicated? My experience is that if the joint is immobilized for a time the disease is quieted more rapidly and there is much less injury. Exercise in the early stages should be avoided until the disease is quiescent. In several cases the only joints which did not undergo ankylosis were those which were protected and rested with casts. Proper attention to the joint in the early stages may prevent a great deal of injury from unnecessary trauma and strain.

DR W H KERR, San Francisco It seems to me that fixing a joint in a cast for a long period is about the worst thing that could be done. It is important to change the position of the joint from time to time.

Analgesia Accompanying Hepatitis and Jaundice in Cases of Chronic Arthritis

DR P S HENCH, Rochester, Minn. In the course of the last four years observations have been made on the effect of intercurrent intrahepatic jaundice on the chronic pain experi-

enced by sixteen patients with chronic arthritis, fibrositis and sciatica. In two of the cases the intrahepatic jaundice apparently was not related to drugs, in fourteen cases it was considered the result of toxic hepatitis caused by cinchophen. Coincident generally with the onset of jaundice, fourteen of the sixteen patients received partial, usually complete, relief of pain for variable periods, moreover, in five of the six cases in which the joints were swollen, reduction of the swelling, sometimes complete, also was noted.

Five of the sixteen patients experienced complete analgesia, which was prolonged for from two weeks to eight months in one instance for seven years, after disappearance of the jaundice. Four patients noted complete disappearance of pain with the onset of fatal hepatitis and jaundice caused by cinchophen, the analgesia persisted until death. In one case, complete relief of pain was noted only for the duration of icterus, in another case, pain disappeared completely at first, returning slightly during the latter part of the period of jaundice. Two patients had marked, although not complete, relief of pain during jaundice, and even thereafter, for two weeks and five months, respectively. No amelioration of pain was experienced by two patients with slight jaundice, and one other noted some relief, which later was lost, even in the presence of definite icterus. In an additional case, of chronic infectious arthritis and hepatitis caused by cinchophen but without jaundice, no relief of pain was experienced.

Analgesia associated with hepatitis and jaundice has not heretofore received detailed comment so far as I am aware. The mechanism whereby analgesia is produced is not known. The duration and degree of relief of pain were roughly proportional to the duration and intensity of the jaundice, as shown by the concentration of serum bilirubin, in at least one case, relief of pain preceded the appearance of visible icterus. The effect is probably not specific and may or may not be the result of a depressant effect of some component of jaundice on the nervous system, or to a sedative action on inflamed tissues. The therapeutic implications are obvious. It would be gratifying were one able to repeat nature's miracle, to provide at will a similar beneficence by the use of some nontoxic component of jaundice effective in available concentration. To explore the possibilities of such treatment, a group of patients is being treated with various substances suggested by this study.

DISCUSSION

DR NATHAN SIDEL, Boston. It is interesting to speculate on the possibilities for future treatment of arthritis in view of these interesting observations that are encountered when jaundice occurs in arthritis. I recently saw a man about 39 years of age who had severe psoriasis followed by severe infectious arthritis so-called psoriatic arthritis. With the onset of an attack of infectious hepatitis or catarrhal jaundice there was tremendous improvement in his arthritis. For several years he had been taking about six tablets of acetylsalicylic acid daily because of pain, but with the onset of jaundice no acetylsalicylic acid was necessary, because all pain of the joints had disappeared. Throughout the fairly intense jaundice, which lasted about five weeks, the patient felt remarkably well and had no pain or stiffness in the joints. With complete disappearance of jaundice some pain and swelling of the joints recurred, but not as much as before the jaundice. Although he has now been free from jaundice for at least four weeks, acetylsalicylic acid has not been necessary, and his pains have been only slight. Within the last two weeks I have given this man two injections of decholin intravenously, but he has not noted any improvement as yet. Another patient, a woman, aged 50, who had infectious arthritis for several years, also experienced improvement in her arthritis with the onset of jaundice. In 1931 a physician prescribed capsules of "oxyiodide." After a few days the patient began to feel better, but ten days later intense jaundice developed lasted five weeks, and was not of the obstructive type. The pains of arthritis disappeared completely with the onset of the jaundice and have remained absent for more than two years. About four weeks ago the patient again began to have some pains in certain joints. She has not taken any medicine fearing to take even acetylsalicylic acid. Dr George Minot of Boston told me that in cases of coexistent pernicious anemia and arthritis, when anemia was marked and the skin tinged yellow, the arthritis was likely to be much

better, with improvement in color and blood count the arthritis sometimes became distinctly worse, demanding treatment. The two cases mentioned one of infectious hepatitis and the other of toxic hepatitis, the observation of Dr Minot, and the experiences of Dr Hench, make one speculate as to whether a clue to the future treatment of arthritis may have been discovered and whether, by giving patients the essential constituent of jaundice which causes relief of pain, relief may be brought about therapeutically.

DR M. H. DAWSON, New York. Did any change in the peripheral circulation occur in these cases?

DR S. S. KIEFFER, Boston. During the last two years I have seen two patients who, during a definite attack of hepatitis, had arthritis for the first time. With subsidence of hepatitis, the arthritis disappeared. I also observed a patient with hemolytic jaundice who during the course of the disease, had attacks of gout, with marked elevation of the value for uric acid in the blood. The attacks occurred before as well as following splenectomy.

DR P. S. HENCH, Rochester, Minn. Dr Russell Haden of Cleveland told me yesterday of a patient with severe chronic atrophic arthritis who last year received complete relief from pain with the onset of jaundice, apparently from neosarsphenamine given empirically. Complete analgesia has persisted to date and in effect the patient is entirely normal. Studies on peripheral circulation were made only in my most recent case. The cutaneous temperatures were normal.

The General Principles of Treatment in Chronic Arthritis

DR G. R. MINOT, Boston. The general principles of treatment of chronic arthritis are to improve all functions of the body, to modify or remove the basic causes, to prevent or control organic changes, and to make adjustments that will lessen the burden of the handicapped organism. The two main types of chronic arthritis are generalized diseases with manifestations in joints and thus the treatment must be directed first toward the patient as a whole and only secondarily toward the joints. The patient must appreciate that he requires a long period of training and, like the physician, must not doubt that wisely conducted treatment leads eventually to success in a large proportion of cases. Rest, habitual relaxation, and tranquility of mind are of the utmost importance in the treatment of arthritis as they are in tuberculosis. Relief from strain of all types must be secured. There would be fewer crippled arthritic patients if the milder and ambulatory cases were treated at once with a program of rest. Exercise of the correct kind and amount and at suitable times, is also important. It influences favorably the retarded capillary circulation and all bodily functions.

There is of course, no standard diet for arthritis. The quantity of the food should not be excessive, and the nutritive quality especially of the protein, should be superior. Removal or alleviation of infection is of distinct importance, but foci of infection must not be eliminated on haphazard advice. To eradicate infectious foci and to do nothing else is comparable to bailing a boat and leaving the hole open. Infection probably plays a much more important part in atrophic than in hypertrophic arthritis. Foci of infection should be removed as early in the course of the disease as possible, for it is then that best results from their eradication are obtained. The physician must not pride himself that he, or even the patient is responsible for all improvements because nature tends to heal the disease.

Intensive treatment, begun early, offers the patient a much better prognosis than if it is delayed until the disease has existed a few years. Enough time for adequate treatment is fundamental. Arthritis touches many fields of medicine. One man must be the patient's chief and take full charge of him and his case. To teach the art of courageous living is often the chief prescription for the patient with chronic arthritis.

DISCUSSION

DR R. B. OSGOOD, Boston. One cannot treat the patient's body only and not consider his mind. A patient must be treated as a whole. The disease cannot be cured by one procedure certainly not by vaccine therapy alone and probably not alone by the brilliant and fascinating things Dr Hench has suggested.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

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Alabama Medical Association Journal, Montgomery

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Yeast Infections Part III Systemic Blastomycosis and Bronchomycosis G Walsh Fairfield—p 458

Postoperative Embolism J Watson Anniston—p 462

Toxemias of Pregnancy Immediate and Delayed Dangers G F Douglas Birmingham—p 465

American Journal of Cancer, New York

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*Quantitative Behavior of Prolan A in Teratoma Testis R S Ferguson New York—p 269

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Juvenile Xanthoma Multiplex Case Report and Discussion of Literature A B McGraw Detroit—p 345

Heredity of Cancer N Dobrovolskaia Zavadskaia Paris France—p 357

Relation of Hypophysis to Growth of Malignant Tumors II Response of Hypophysectomized Rats to Inoculation with Walker Transplantable Mammary Carcinoma L T Samuels and H A Bill with technical assistance of Winer Simpson San Diego Calif—p 380

Permeability of Blood Vessels In and Around Grafted Jensen Rat Sarcoma II Burrows London England—p 383

Prolan A in Teratoma Testis—Ferguson reports a series of 117 consecutive cases of teratoma testis, in which he studied the quantitative excretion of prolan A. He describes the Zondek technic for the quantitative estimation of prolan A in the urine. The patient with teratoma testis will excrete from 50 to 50,000 mouse units of prolan A per liter of urine depending on the embryonal character of the tumor the extent of the disease and the status as regards treatment. Irradiation of the primary tumor and its metastases causes a decrease in the excretion of prolan A in the urine. Local recurrence or metastasis is accompanied by an increase in the excretion of prolan A in the urine frequently before clinical detection of the lesion is possible. Serial observations at frequent intervals while the patient is under active treatment by irradiation give important prognostic information. Observations at necropsy reveal the important relation between the hormone of the anterior lobe of the pituitary and epithelial hyperplasia in the genital organs of the male particularly the prostate and seminal vesicles.

American J Obstetrics and Gynecology, St. Louis

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Epithelial Proliferation in Cervix Uteri During Pregnancy, and Its Clinical Implications J Hoffbauer Baltimore—p 779

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Test of Labor L Rudolph Chicago—p 840

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Ablatio Placentae Followed by Soughing of Uterus Report of Case W A Coventry and R J McE Duluith Minn—p 859

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*Pupillary Test for Diagnosis of Pregnancy Based on Observation of Three Hundred and Eighty Two Patients Z Bercovitz Pyengang Chosen—p 882

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Abruptio Placentae I A Siegel Baltimore—p 894

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Simple Procedure of Ascertaining Sex of the New Born Where Diagnosis Is Difficult Due to Genital Abnormalities J T Witherspoon New Orleans—p 921

Umbilical Cord Relatively Shortened by Coiling About the Neck of the Fetus A Zehm Schofield Barracks Hawaii—p 923

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Pupillary Test for Pregnancy—Bercovitz studied the pupillary reactions of pregnant women, nonpregnant women and men. One drop of a 10 per cent solution of sodium citrate is mixed with 5 or 6 drops of the patient's blood and instilled into one eye. The other eye is used for control observation and comparison. The test requires about two minutes and the reaction usually lasts for about five minutes. Of the 138 women who were not pregnant, none showed a positive pupillary reaction. Sixteen men gave negative reactions. There were no false positive reactions. In 183 patients the diagnosis of pregnancy was confirmed by subsequent events. Of these, 155, or 84.7 per cent showed positive pupillary reactions. In one there was a positive pupillary reaction twelve days after the onset of the last menstrual period. Forty one postpartum cases were observed. Thirty-four gave negative pupillary reactions. One patient who had a positive reaction before delivery gave a negative reaction fifteen minutes after the delivery of twins and the placenta. Phenol, 0.2 per cent in physiologic solution of sodium chloride will prevent or abolish a pupillary reaction of pregnancy. Neutralized female sex hormone, isolated from the urine of pregnant women failed to cause a pupillary reaction when instilled into the conjunctival sac of fourteen pregnant women. All these women reacted positively to their own blood.

Treatment of Uterine Bleeding with Snake Venom—Peck and Goldberger treated twelve patients with snake venom for functional uterine bleeding. The period of time in which bleeding was controlled varied from five days to two and three weeks. In most of the patients it required about six injections given over two to three weeks before any definite effect was noted. With the control of the uterine bleeding there was a rapid improvement of the secondary anemia usually present. The venom of *Ancistrodon piscivorus* was used in 1:3,000 dilution with sterile physiologic solution of sodium chloride containing 1:10,000 merthiolate. It was given intradermally. The initial injection was 0.2 cc and subsequent injections were 0.4 cc, given two times a week. The therapy was continued for from three to six months. Treatment should be given for at least three months, even in the presence of marked clinical improvement. For the first five or six injections, care should be taken that the injection sites are separated from one another at least 10 cm. The left and right arm and the right and left thigh can be used. If hypersensitivity occurs, it is advisable to reduce the concentration to 1:10,000 and to continue the injections until a dose of 0.4 cc of 1:3,000 is used. By this means, desensitization without any untoward reactions was obtained in practically all cases. The injections should be planned as follows: 0.1 cc of 1:10,000, 0.4 cc. of 1:10,000, 0.2 cc. of 1:6,000, 0.4 cc of 1:6,000, 0.1 cc of 1:3,000, and 0.4 cc of 1:3,000.

Friedman Pregnancy Test—The present modification of the Friedman pregnancy test, as adopted by Vesell in 533 cases, showed 100 per cent accuracy. A positive result has been obtained after the death of a fetus for a period of from four to six weeks in gestations of six months duration or

more The procedure differs from the original Friedman test in that 7 cc instead of 5 cc of urine is injected Necropsy is performed in forty-eight hours instead of twenty-four Female rabbits of any size, weighing at least 1,600 Gm, instead of virgin rabbits may be used In cases of early amenorrhea, the same rabbit is re injected with 7 cc of the same urine, twenty-four hours after the first injection The urine is kept in the icebox between injections Necropsy is performed forty-eight hours after the initial injection

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Am J Roentgenol & Rad Therapy, Springfield, Ill

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Diagnosis of Bone and Joint Tuberculosis—According to Pomeranz, the criteria utilized in the roentgen diagnosis of tuberculosis are subject to diversified exceptions which make accurate interpretation of this disease extremely difficult The changes in the bones and joints are dependent on the severity and duration of the process as well as the specific locality involved The presence of a sinus and infection introduces factors whose roles in the process are extremely difficult to evaluate The intelligent appraisal of characteristic changes and the modifications produced by extraneous circumstances determine the successful diagnosis of the disease The usual roentgen changes of joint tuberculosis are synovitis and periarticular swelling bone atrophy or sclerosis bone production and destruction in the epiphysis and metaphysis, narrowing of the joint space sequestration and the presence of cold abscesses or sinuses 1 Synovitis periarticular swelling and bone atrophy are common to all arthritides and are only of corroborative

value in the diagnosis of tuberculous arthritis Bone atrophy is usually marked, but its intensity is modified by numerous imponderable factors which complicate diagnosis 2 Sclerosis and bone production occur in tuberculosis even in the absence of a mixed infection When sinuses exist, bone production may be absent Diaphyseal tuberculosis in long tubular bones is rare and, roentgenologically, the diagnosis is impossible 3 Wedge or cone shaped lesions are usually tuberculous 4 'Kissing' sequestrums are common in tuberculosis 5 Narrowing of a joint space which occurs late in an infection, despite associated destructive changes, is strongly presumptive of the existence of tuberculosis 6 Complications, such as kyphosis subluxation and sinus formation, occur in tuberculosis as well as in other arthritides 7 Roentgenologically, the presence of a cold abscess specifically identifies the process as tuberculous

Primary Chondroma of Lung—Benninghoven and Peirce point out that the majority of primary chondromas of the lung are located near the pleural surface The neoplasm is usually round or oval varies in size and is always encapsulated Two characteristics, the nodular, lobulated structure and the tendency to undergo calcification or osseous transformation, are important from a roentgenologic standpoint Microscopically the most prominent element is cartilage, both the hyaline and the fibrous type are frequently encountered In the roentgenogram a primary pulmonary chondroma should present (1) an abnormal mass of great relative density surrounded by a normal air-containing lung, (2) a sharply defined lobulated border and (3) within it scattered, irregular areas of even greater density representing calcium or bone In the differential diagnosis the sharply defined periphery of the chondroma surrounded by normally aerated lung is easily distinguished from an encapsulated chronic inflammation (old abscess or tuberculous lesion with calcification) Cellular infiltration in the immediate lung parenchyma usually accompanies an inflammatory condition It is absent in the neighborhood of the chondroma Solitary echinococcus cysts of the lung occur more often than primary pulmonary chondroma The roentgenographic appearance is similar, but the border of the shadow of the echinococcus cyst is smoother and there may be slight cellular infiltration in the surrounding lung parenchyma The cystic mass is usually of homogeneous density The history of previous infestation with *Taenia echinococcus*, potential exposure to the parasite, and the complement fixation test are of value in making the differentiation The tumor is essentially nonmalignant except when its location produces a mechanical obstruction It can be successfully removed, if necessary, when favorably situated and without fear of recurrence The neoplasm is sufficiently characteristic, roentgenographically to permit identification without microscopic study

Annals of Internal Medicine, Ann Arbor, Mich

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Addison's Disease and Its Relation to Experimental Adrenal Insufficiency G A Harrop Baltimore—p 1579
Influence of Age in Experimental Production of Hypertrophic Arthritis Preliminary Report A D Goldhaft Lillie M Wright and R Pemberton Philadelphia—p 1591
Correlation of Hemodynamics Function and Histologic Structure of Kidney in Malignant Arterial Hypertension with Malignant Nephrosclerosis Soma Weiss F Parker, Jr and G P Robb Boston—p 1599
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Addisin in Diseases of Blood—Morris and his associates state that the hematopoietic hormone (addisin) is a normal constituent of the gastric secretion of man, dogs, swine and cattle It is probably distributed widely in the animal kingdom

dom Addison may be recovered in a form suitable for intramuscular injection by concentration in vacuo, by dialysis and by conversion to an ethyl ester. A preparation for intravenous use has not yet been obtained. A single large dose of addisin may be sufficient to induce a remission in pernicious anemia and is more effective than repeated small doses. There is evidence to suggest that the cause of erythremia may be a hypersecretion of addisin or a hypersusceptibility to stimulation by it on the part of the bone marrow. The results of treatment of acholuric jaundice with addisin are sufficiently encouraging to warrant further trial. The possibility of establishing normal maturation of the red cells is suggested. In a patient with agranulocytic anemia, the leukocytic reaction and clinical improvement have been remarkably prompt. In this disease it is possible that addisin may be curative. Theoretical considerations indicate the possibility that addisin may play a significant part in other blood dyscrasias.

Changes in Heart Shadow in Toxic Goiter—Menard and Hurxthal made roentgenograms before and after treatment in 115 cases of toxic goiter. Comparisons of the films were made by measurement and by superimposition. Definite reduction in size was observed after congestive heart failure was relieved and after auricular fibrillation had ceased, and in a few cases without these complications. The authors conclude that superimposition of seven-foot roentgenograms of the heart is the most satisfactory method of judging changes in the size and shape of the heart. Very little change takes place in the heart shadow in uncomplicated cases of toxic goiter with normal rhythm following removal of thyroid toxicity by subtotal thyroidectomy. Cardiac dilatation as shown by roentgenograms takes place most frequently in congestive heart failure with or without auricular fibrillation. Occasionally in cases of toxic goiter of sufficient duration, uncomplicated by other cardiovascular disease, certain changes in the heart shadow may be found which have been described as characteristic of hyperthyroidism.

Annals of Otol, Rhinol and Laryngology, St Louis

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- Unreal Phenomena in Audition and Their Relation to Test Methods. A. G. Pohlman. Vermilion, S. D.—p. 352.
- Relation of Increased Intracranial Pressure to Disease in Pneumatic Spines. J. W. Carmack. Indianapolis.—p. 364.
- Agranulocytosis. Appearance of Early Pharyngeal Lesion. Three Cases, One Apparent Recovery. J. B. Costen. St. Louis.—p. 372.
- Lichen Planus of Oral Cavity Without Cutaneous Manifestations. S. E. Roberts. Kansas City, Mo.—p. 385.
- Cytologic Study of Sphenoid Sinus. E. C. Sewall. San Francisco.—p. 391.
- General Indications for Radical Sinus Surgery. G. M. Coates. Philadelphia.—p. 400.
- *Retropharyngeal Abscess of Otitic Origin. Anatomy and Pathogenesis. Report of Cases. S. Z. Faier. St. Louis.—p. 408.
- *Blue Mantles in Otosclerosis. Contribution to Pathology of Labyrinthine Capsule. M. H. Weber. Berlin, Germany.—p. 438.
- Surgical Treatment of Suppuration of Petrosal Pyramid. E. M. Seydell. Wichita, Kan.—p. 455.
- Differential Diagnosis in Headache of Periodic Type. T. R. Gittins. Sioux City, Iowa.—p. 463.
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- Chemical and Cytologic Study of Aural and Nasal Exudates as Regards Chemical Diagnosis of Cholesteatoma. L. W. Dean, Jr. and Marian C. Pfingsten. St. Louis.—p. 484.
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- Some Unusual Neuro Otologic Cases. S. L. Shapiro. Chicago.—p. 504.
- Recurring Mastoiditis. N. F. Lacy. Kansas City, Mo.—p. 526.
- Technical Procedure of Operation on Osteomas of Ethmoid Labyrinth. A. C. Fetisov. Tomsk, Siberia.—p. 533.
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- Papillomatosis Laryngis. J. H. Foster. Houston, Texas.—p. 548.
- Eustachian Catheter. Short Historical Outline. G. E. Tremblé. Montreal, Canada.—p. 560.
- Bacteriology of Maxillary Sinuses. Clinical Aspect. O. H. MacLay. Chicago.—p. 567.
- Id. Laboratory Aspect. Ruth E. Getts. Chicago.—p. 576.

Retropharyngeal Abscess of Otitic Origin—Faier states that a retropharyngeal abscess if left to itself may result in any of the following complications: particularly when overlooked oftentimes being undiagnosed and discovered only at necropsy. (1) Spontaneous rupture into the esophagus may occur. (2) rupture into the air passages may occur, with production of pneumonia, lung abscess or sudden asphyxia, (3)

pus may burrow laterally and appear externally, anterior or posterior to the sternocleidomastoid muscle. (4) pus may pass downward behind the esophagus and enter the posterior mediastinum, (5) the process may spread by way of the blood and lymph channels to cause septicemia, pyemia or meningitis, (6) the abscess may cause erosion of the large vessels of the neck, such as the internal carotid artery or internal jugular vein, (7) respiration may be interfered with by pressure on the larynx with production of edema of the glottis, (8) jugular thrombosis may result, (9) cardiac failure may occur by pressure on the vagus and sympathetic nerves, and (10) pus may extend into the axilla along the subclavian vessels and brachial plexus. Retropharyngeal abscess may be caused by suppuration in the retropharyngeal lymph nodes, caries of the cervical vertebrae and burrowing of pus from other regions by direct extension. Burrowing of pus may be the result of infection following injury to the posterior wall of the pharynx from an injury or a foreign body, otitic infection, suppuration of the parotid gland and lymph nodes, dental infection and tonsillar and posttonsillectomy infections. The author reports nine cases in which suppurative otitis media was an important etiologic factor in the formation of the retropharyngeal abscess.

Blue Mantles in Otosclerosis—Weber has histologically examined fifty-one human temporal bones showing otosclerosis but no signs of Paget's disease. In all fifty-one labyrinthine capsules the bone surrounding the otosclerotic focus showed processes of transformation. This transformation of bone made its appearance in the form of perivascular mantles and in 28 per cent of the cases examined in the form of so-called blue mantles. With the silver stain (after Bielschowsky-Maresch) and with the aid of the polarized light, especially with the new "two-picture method" of the author (i. e., one photomicrograph of the hematoxylin-eosin stained section and another photomicrograph of the same object in polarized light), it was found that the blue mantles consisted of a primitive, mainly plexus-like pathologic bone tissue, newly formed after previous lacunar absorption of the surrounding bone from the vessel space. The remaining 72 per cent showed red mantles and mixed mantles. The mixed mantles consisted partially of plexus-like bone and partially of lamellar bone. The red mantles consisted only of lamellar bone. All these perivascular areas followed previous absorption. The author concludes that otosclerosis cannot be regarded generally as a purely primary focal disease but must be regarded as a disease at least of the whole labyrinthine capsule. He discusses the significance of this fundamental result for the problem of otosclerosis. The investigations of the author lead him to believe that in every case of otosclerosis the general skeletal system shows pathologic changes.

Arch of Physical Therapy, X-Ray, Radium, Chicago

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- Physical Therapy in Treatment of Fractures. C. R. Murray. New York.—p. 325.
- Indications and Contraindications of Roentgen Ray Radiation. F. C. Wood. New York.—p. 329.
- Ultraviolet Radiation as an Aid in Prevention of Common Colds. G. H. Maughan. Ithaca, N. Y.—p. 335.
- Radiotherapy on Oxygen Content and Capacity in Human Blood. Saturation Point of Hemoglobin with Oxygen. Anna Goldfeder, New York.—p. 339.
- Treatment of Subacromial and Subdeltoid Bursitis. M. Weisblum, Philadelphia.—p. 341.
- *Use of Galvanic Current in Atrophic Rhinitis. J. S. Stovin. New York.—p. 345.
- Pulse Rate Indicating and Recording During Radiotherapy Application. M. M. Schwarzschild. New York.—p. 347.
- Late Progress in Radiotherapy. M. Cutler. Chicago.—p. 350.
- Physical and Therapeutic Considerations of Mercury Spectrum. J. S. Hibben and J. S. Beckett. Pasadena, Calif.—p. 354.
- Major Electrosurgery. E. H. Trowbridge. Worcester, Mass.—p. 363.

Galvanic Current in Atrophic Rhinitis—During a period of six years Stovin used the galvanic current in atrophic rhinitis. It has proved the most satisfactory. With this he depends solely on the stimulating effect on the mucous membranes and nerve endings and not on any chemical effect of some medicinal agent such as zinc sulphate being driven into the membrane by the current. He finds that the stimulation of the mucous membrane tends to restore partially its normal physiologic functions and that the stimulation of the olfactory nerve endings improves the sense of smell. He employs the following method. The nose is thoroughly cleansed by wet

suction, warm physiologic solution of sodium chloride being used. The fluid is run into one nostril, the head being lowered, while the patient says "K-K-K," and the return flow is sucked from the other nostril into a suction bottle. The nasal tips are alternated several times during the procedure so that the nose will be thoroughly cleansed of all mucus and crusts. The nostrils are then packed with successive layers of absorbent cotton strips which have been dipped in physiologic solution of sodium chloride. These should completely fill the nose from the floor to the roof, including the olfactory area. The cotton strips should be long enough to extend half an inch out of the nostrils. The active pole is attached to the protruding cotton and the inactive pole is held in the patient's hand or attached to his arm. The current is turned on and the rheostat moved up slowly until the patient experiences a salty taste in the mouth. The millimeter reading is usually between 5 and 10. The current is applied for fifteen minutes and the packs are removed. An oil, such as balsam of peru in castor oil or Mandl's solution, is applied to the mucous membrane. These treatments are given three times a week at first and later, as improvement is noted, at longer intervals. Improvement occurs when the membranes become redder, moist and thicker. The postnasal discharge lessens and the sense of smell is markedly improved.

Arkansas Medical Society Journal, Little Rock

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Anterior Pituitary Growth and Sex Hormones H H Turner Oklahoma City—p 1
Roentgenology as Aid in Obstetrics W R Brooksher Fort Smith—p 3

Canadian Medical Association Journal, Montreal

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Clinical Classification of Bright's Disease H C Jamieson Edmonton Alta—p 614
*Injuries of Semilunar Cartilage Effective Treatment of Recent Injuries and of Some Recurrent Types C S Wright Toronto—p 618
Sycois and X Rays A Martin Montreal—p 621
Mental Conflict W H Cassels Ponoka Alta—p 624
Present Status of Anesthetic Ether Regarding Its Common Impurities W B Neff Montreal—p 627
Diagnosis and Treatment of Disorders of Parathyroid Glands R F Farquharson, Toronto—p 629
*Osteitis Fibrosa with Multiple Benign Giant Cell Tumors L H Leggett Guelph Ont—p 636
Comparative Study of Human Ova P J Kearns Montreal—p 640
Relapsing Fever in North America Report of Outbreak in British Columbia J H Palmer and D J M Crawford Trail B C—p 643

Injuries of Semilunar Cartilage—Wright states that the treatment of an injured lateral ligament with displaced or injured cartilage or of a severe injury of the lateral ligament alone is 1 Reduction, accomplished by nearly full flexion, internal rotation of the tibia, and extension, preferably under an anesthetic. 2 Injection of from 5 to 10 minims (0.3 to 0.6 cc) of tincture of iodine at the point of greatest tenderness, and deep enough to reach the tibial border, to create an aseptic inflammatory reaction sufficient to aid the cartilage to adhere. 3 Fixation in extended position by a light plaster cast with only stockinet or a single bandage lining, and a piece of silence cloth over the knee and the prominence of the head of the fibula. 4 A rest of one or two days, after which function should be permitted by walking, i.e., weight bearing. 5 Muscle redevelopment. 6 Prevention of mechanical stress by elevation of the heel of the shoe on the inner border for internal cartilages. In acute primary injuries the swelling may be so tense and the pain so severe as to make the early fixation in plaster inadvisable in which case extension should be preserved by a posterior splint and rest, and, if the pain is acute, aspiration is advisable and will give great relief.

Osteitis Fibrosa—Leggett reports a case in which the areas of osteitis fibrosa were associated with benign giant-cell tumors. In the single lesion of this condition good results

have been obtained by thorough curettage and phenolization of the interior of the tumor. This may or may not be followed by the inlay of a bone transplant, which course will be determined by the function of the part. Zinc chloride has also given good results. Packing the cavity with gauze may lead to infection and should not be done, as fatal hemorrhage may occur when the packing is removed. The limb should be immobilized to prevent pathologic fracture. To prevent recurrence, radium or high voltage roentgen therapy is recommended. Irradiation results only in a 20 per cent recurrence. A certain amount of danger is involved in employing radiation too soon after operation, as a local breaking down of the skin may follow with subsequent infection. During the early months the tumor may increase in size under irradiation but this increase is soon followed by a shrinking of the growth and formation of a new dense bone. In multiple cases, irradiation appears to be the only possible line of attack.

Illinois Medical Journal, Chicago

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Intracapsular Cataract Extraction by Vacuum Cup Method Preliminary Report of Fourteen Cases E R Crossley Chicago—p 519
Preexisting Diseases Independent of Employment Versus Industrial Accidents K Curie Los Angeles—p 521
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What Caused This Psychosis and Why This Type of Psychosis? C E Mayos East Moline—p 581

Treatment of Headache with Chondroitin Sulphuric Acid—While studying the action of chondroitin sulphuric acid in peptic ulcer, Crandall and Roberts observed a striking effect on the headaches of which a number of the patients complained. The headaches in these cases were not due to previous alkali therapy. In two of the patients, the headache was definitely migrainous in character. Therefore they administered chondroitin sulphuric acid to forty-two patients with idiopathic headache. More than 50 per cent have been markedly benefited, and another 30 per cent appear to be partially relieved. The cases are classified as migraine, migranoid or simple headache. The authors discuss the criteria for these classifications. The proportion of improvement in the three groups is similar. The period of treatment varied from two to twelve months. As a rule continued administration is necessary to maintain improvement. The optimal dosage, administered orally, has appeared to be 3 Gm a day, only rarely has benefit resulted from larger doses. The response appears to be equally satisfactory whether the substance is given three times a day in divided doses or the whole amount once daily.

Treatment of Endocervicitis—Soter believes that the treatment of endocervicitis by thermocauterization or electrocoagulation is the method of choice. Surgery should not be done until after one of these methods has been tried. Prophylaxis after parturition and repair of cervical tears will help to reduce materially these infections and prevent more serious trouble. The treatment and cure of endocervicitis often mean the prevention of cancer. Reduced physical resistance predisposes to these infections. Indiscriminate douching and careless vaginal examination often introduce them. Complications following thermocauterization and electrocoagulation are possible and due caution should be used in patients before the menopause.

Journal of Comparative Neurology, Philadelphia

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- Development of Lateral Line Sense Organs in Amphibians Observed in
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Journal of Lab and Clinical Medicine, St Louis

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ity and Urea Nitrogen Content of Blood W Z Fradkin and J
Siegel, Brooklyn—p 949
- Rose Bengal Test of Hepatic Function Spectroscopic Method T L
Althausen G R Biskind and W J Kerr San Francisco—p 954
- Supersaturation of Antigenic Beef Heart Extracts with Cholesterol and
Its Effect on Sensitivity and Specificity of Complement Fixation Reac-
tion B S Levine, Chicago—p 958

Complement Fixation Test in Amebiasis—Craig bases his observations on the results of the complement fixation test on the blood serum of 1,000 persons suffering from definite symptoms of amebiasis such as amebic 'carrier' cases having no symptoms of the infection, patients in the wards of a general hospital suffering from other disease conditions than amebiasis, and patients sent to him for examination or seen by him in consultation. The technic employed by him has not differed from that described in 1929. A human hemolytic system is used the serums to be tested are inactivated by heating at 56 C in the water bath for half an hour, and the antigen employed is an alcoholic extract of 48 hour old cultures of *Endamoeba histolytica* grown on the Boeck-Drbohlav medium. The test was not considered positive unless a three or four plus reaction was obtained on a four plus scale. The specific complement fixing bodies disappear from the blood serum following intramebic treatment and the disappearance of *Endamoeba histolytica* from the feces. In relapsing cases of amebiasis the complement fixation test which has been negative during the interval of apparent freedom from *Endamoeba histolytica*, again becomes positive in rare instances even before the parasite is again demonstrable in the feces. The time of disappearance of the positive complement fixation reaction after treatment resulting in the disappearance of *Endamoeba histolytica* from the feces has varied between three and twenty-eight days. In 86.6 per cent of the cases the reaction disappeared within fourteen days after the cessation of antamebic treatment and in 96.6 per cent within twenty one days. Persons infested with other species of amebas or with the intestinal flagellates do not give a positive complement fixation with this test unless *Endamoeba histolytica* is also present. The complement fixation

reaction gives the strongest positive results in symptomless "carriers" or in those presenting mild symptoms of infection with *Endamoeba histolytica*. The test has proved of value in the diagnosis of cases of amebic abscess of the liver unaccompanied by intestinal symptoms, in the diagnosis of apparently healthy "carriers" of *Endamoeba histolytica* and of persons presenting atypical or mild symptoms of infection, and in the control of antiamebic treatment.

Rheumatoid Arthritis—Stainsby and Nicholls treated 103 patients by removing diseased tonsils. Sixty showed subsequent improvement of their arthritic condition. Twenty had no other form of therapy, while eighty-three were also given streptococcus vaccine. No higher rate of improvement was noted in patients having vaccine and tonsillectomy combined than in those having tonsillectomy alone. The results in the tonsillectomy group were best in young patients and those having mild arthritis. Of thirty-five patients who had abscessed teeth removed, twenty-four showed improvement. Thirty of the thirty-five also received streptococcus vaccine therapy. The authors attribute the high percentage of improvement in these patients to the removal of abscessed teeth. Of 194 patients treated with vaccine therapy alone, sixty-nine showed improvement. The authors' results with vaccine therapy were extremely disappointing, as the low percentage of improvement may well represent the natural tendency of some patients to improve regardless of treatment.

Primary Sarcoma of Heart—Morris reports an instance of primary sarcoma of the heart in a case which unfortunately furnished little clinical history. The tumor was a small round cell sarcoma originating in the right auricle, which, because of the apparent normal health of the deceased during the fifteen years of his life, must have been insidious in onset but after that became a rapidly growing fatal neoplasm.

New Blood Plasma Chloride Method—In their blood plasma chloride method, Cavett and Holdridge prepared a Folin-Wu filtrate of the blood or plasma (1 cc of blood or plasma, 7 cc of water, 1 cc of two-thirds normal sulphuric acid and 1 cc of 10 per cent sodium tungstate thoroughly shaken together and filtered). They pipetted 5 cc of the filtrate into a large test tube and added 0.2 cc (three drops) of a fresh 5 per cent solution of sodium nitroprusside. Mercuric nitrate (1 cc is equivalent to 1 mg of sodium chloride) is added from a microburet until a permanent turbidity is produced on the addition of one drop (Titration value in cc $\times \lambda \times 200 =$ mg of sodium chloride per hundred cubic centimeters of plasma). The titration corrections (λ) which Kolthoff and Bak determined for varying concentrations of corrosive mercuric chloride in water are slightly low for the Folin-Wu filtrate, therefore the titration is made directly on the Folin-Wu filtrate and the end point is easier to observe than that obtained with the methods now in use.

Journal of Thoracic Surgery, St Louis

2 429 532 (June) 1933

- Cellular Reaction of Pleura to Infection with *Mycobacterium Tuberculosis* L G Montgomery and W S Lemon Rochester Minn—p 429
- Method of Measuring Lung Volume in Dogs H K Beecher and H H Bradshaw Boston—p 439
- Effect of Laparotomy and Abdominal Distention on Lung Volume H K Beecher H H Bradshaw and G Lindskog Boston—p 444
- Penetrating Wounds of Chest Studies on Experimental Hemithorax J C Sandison and D C Elkin Atlanta Ga—p 453
- Effects of Closed Pneumothorax Partial Occlusion of One Primary Bronchus Phrenicectomy and Respiration of Nitrogen by One Lung on Pulmonary Expansion and Minute Volume of Blood Flowing Through Lungs R L Moore and H W Cochran New York—p 463
- *Tensile Strength of Paralyzed Diaphragm Preliminary Report R H Meade Jr Philadelphia—p 503
- Anatomic and Physiologic Criteria for Surgical Relief of Cardiac Pain I Heinbecker St Louis—p 517

Paralyzed Diaphragm—Meade subjected six dogs to unilateral transpleural phrenic neurectomies. In four of them, paralysis and atrophy of the corresponding halves of the diaphragm were still present when the dogs were killed ten months later. In two regeneration of the phrenic nerves occurred with a complete restoration of normal function and of normal gross appearance of the diaphragm in one and an uncertain restoration in the other. Studies of the tensile strength of the

two halves of the diaphragm were made which showed consistently and significantly higher figures for the paralyzed half. Whether or not the difference is a true one cannot be definitely concluded at this time. It can, however, be definitely stated that a decrease in tensile strength of the diaphragm does not result from phrenic neurectomy.

Journal of Urology, Baltimore

29 631 762 (June) 1933

- Lipomatosis or Destructive Fat Replacement of Renal Cortex. Report of Eleven Cases. H. H. Young. Baltimore—p. 631.
- *Pyelitis Cystica and Ureteritis Cystica. Report of Case Diagnosed by Urography and Confirmed by Biopsy with an Outline of Treatment. L. Kindall. Oakland Calif.—p. 645.
- Fibroids of Urinary Bladder. Report of Case with Unusual Complications. J. F. Geisinger. Richmond Va.—p. 661.
- Pararenal Teratoma in Infant. Case Report. M. T. Campbell. New York—p. 677.
- Traumatic Rupture of Hydronephrotic Kidney. G. H. Ewell. Madison Wis.—p. 685.
- Unilateral Fused Kidney with Nonobliteration of Hypogastrics. E. Hess. Erie Pa.—p. 695.
- Roentgenographic Demonstration of Perirenal Lymphatics. E. W. Exley. Minneapolis—p. 717.
- Technic of Intravenous Urography in Rabbit. W. F. Mengert. Philadelphia—p. 721.
- Hourglass Deformity of Urinary Bladder. W. M. Kearns and S. M. Turkeltaub. Milwaukee—p. 729.
- Actinomycosis of Bladder. Report of Case. C. C. Herger. Buffalo—p. 739.
- Pericystitis Complicated by Acute Intestinal Obstruction. R. F. O'Neill. Boston—p. 745.
- *Treatment of Prostatitis by Injection. O. Grant. Louisville Ky.—p. 749.

Pyelitis and Ureteritis Cystica—Kindall reports a case of pyelitis cystica and ureteritis cystica diagnosed by urography and confirmed at operation and, so far as he can determine by a study of the literature, the first case conclusively diagnosed. Cystoscopy was of no diagnostic value, since there was no cystitis cystica present. Combined intravenous (by means of a new urographic contrast agent) and bilateral, retrograde pyeloureterograms were made throughout the study. The dilated ureters were due to obstruction of the lumen of the ureters by the cysts, mechanically causing back pressure or interfering with the functional peristalsis of the ureter. The author states that large ureteral catheters passed to the kidney pelvis and left in place for several days mechanically rupture many cysts and that the injection of silver nitrate solution at the time of removal, by its astringent action destroys other traumatized cysts.

Treatment of Prostatitis by Injection—Grant has applied mercurochrome directly to the interior of the infected gland in prostatitis. To do this, he first fills the bladder with water and then while keeping a guiding finger in the rectum he introduces a 6 inch, 22 gage needle through the perineum of the patient in the lithotomy position. The needle is kept in the middle line and, by close adherence to the rectal wall, the possibility of injuring the bulb is avoided. The needle can be felt to pass through the prostatic capsule by the definite increase in resistance and, once it is through this point, it can be directed to the portions of the gland at will. The hub of the needle is then attached to a Loktite syringe and a 1 per cent solution of freshly made mercurochrome is injected into the gland. The amount of fluid to be injected is gaged by the pressure felt. As the needle is withdrawn, a light flow of the fluid is maintained to sterilize the tract it makes in the perineum. From 10 to 20 cc of mercurochrome is injected at various points throughout the gland, accompanied by gentle massage of the prostate to disseminate the drug. The treatment in the first 100 cases was confined to chronic prostatitis without any demonstrable disturbance in the vesicles. Since then the author has injected all types of infected glands many times doing a vasopuncture and injecting mercurochrome through the vasa. In all his cases of epididymitis in which he deemed surgery advisable he injected the prostate at the time of doing the epididymotomy. He has used this treatment in more than 400 cases and so far has not had a single untoward result. Not all cases are improved, but the proportion of cures both from a clinical and a laboratory standpoint has been high. The author concludes that the injection of mercurochrome promotes rapid disappearance of pus and organisms from the prostate and diminishes the duration of the disease.

Medical Journal and Record, New York

137 477 512 (June 21) 1933

- Function of Neuroglia as Protective Barrier in Development of Uremia. K. Rothschild. New Brunswick N. J.—p. 477.
- Tuberculous of Thyroid. H. Cohen. New York—p. 481.
- Importance of Posture in Health. B. M. Canter. New York—p. 483.
- Concepts of Endocrinology. S. J. Essenson. New York—p. 484.

New England Journal of Medicine, Boston

208 1233 1284 (June 15) 1933

- Origins of Thoracic Surgery. E. C. Cutler. Boston—p. 1233.
- *Alcoholic Polyneuritis. Dietary Deficiency as a Factor in Its Production. G. R. Minot. M. B. Strauss and S. Cobb. Boston—p. 1244.
- Clinical Manifestations of Early Cancer of Breast with a Discussion on the Subject of Biopsy. F. I. Adair. New York—p. 1250.
- *Extreme Case of Pyelitis of Pregnancy Treated by Nephrostomy with Recovery and Subsequent Successful Delivery. L. E. Phaneuf and R. C. Graves. Boston—p. 1255.
- Diagnosis of Mild Smallpox and Scarlet Fever. C. Armstrong. Washington D. C.—p. 1257.

"Alcoholic" Polyneuritis—Minot and his associates treated fifty-seven patients with undoubted "alcoholic" polyneuritis, who had gastric analyses performed or adequate dietary histories taken and usually both, by a diet rich in complete proteins, minerals and vitamins. This daily diet included from 150 to 250 Gm of beef liver pulp, 200 Gm of orange juice, 100 Gm of muscle meat, 500 cc of milk and large helpings of fresh vegetables, fruits and butter. Concentrated carbohydrate food was given sparingly. Daily about 60 cc of cod liver oil and 12 Gm of autolyzed yeast or extractives were given each patient and iron when indicated. The authors believe that under this regimen recovery has been observed more uniformly and with greater rapidity than previously. However, evaluation of therapeutic results in the absence of a 'yardstick' to measure such results is notoriously difficult, and in a condition of as chronic a nature as polyneuritis, in which regeneration of nerve tissue occurs only slowly at best, it is hazardous to interpret what causes benefit. Since patients were admitted in all stages of the disease and in all states of health, it was impossible to compare intelligently and statistically the results of treatment with special diets and those obtained in other ways. Furthermore dietary treatment has been employed as a routine in recent years so that comparisons could be made only with cases treated by other individuals and there appear to be no published data for proper statistical comparison while hospital records do not furnish satisfactory information for such a purpose. Alcohol itself may act not only as a poison to the nervous system but also by diminishing the effectiveness of vitamins. Cowgill has shown that the amount of vitamin B required by the organism is in some measure proportional to the total metabolism. The consumption of much alcohol may lead to an abnormal increase of daily total metabolism since a quart of whisky furnishes at least 2800 calories, so that an unusual demand for vitamin B might develop. The concept that dietary deficiency, especially the lack of vitamin B₁₂, plays an important part in the production of "alcoholic" polyneuritis is favored by the grossly deficient diets taken by the patients for a long time, and the similarity of the lesions and symptoms to those of beriberi. The seasonal variation, the precipitating influence of infection and the frequent occurrence of achlorhydria are similar to what occurs in certain known deficiency disorders. Pellagra and other dietary deficient states may occur in persons with alcoholic polyneuritis. If a good diet rich in protein and vitamins causes more satisfactory improvement than any other form of therapy, it only strengthens the fact that a state of deficiency causes polyneuritis in chronic alcoholism.

Pyelitis of Pregnancy Treated by Nephrostomy—Phaneuf and Graves report a case of severe pyelitis complicating pregnancy. All the usual medical and cystoscopic measures having failed to give relief, a right nephrostomy was resorted to with satisfactory results. Two other complications developed in the form of otitis media with mastoiditis and perirectal abscess. The patient was in such a weakened condition that the complications were treated conservatively. Two small blood transfusions were administered. Labor occurred without serious mishaps at a time when the patient's general health had improved. The child gained normally. The nephrostomy sinus closed immediately following delivery. The mother subsequent to her discharge from the hospital, had a mastoid operation performed and made a good recovery.

Pennsylvania Medical Journal, Harrisburg

36 641 738 (June) 1933

- Laboratory Methods in Diagnosis and Treatment of Arthritis R L Cecil New York—p 641
 *Progress Relative to Diseases of Ductless Glands L G Rowntree Philadelphia—p 646
 Cardiovascular Disease Management of Patients with Heart Symptoms of Nervous Origin J D Heard Pittsburgh—p 661
 Id Clinical Comparison of Whole Leaf and Purified Glucoside Preparations of Digitalis W D Stroud A W Bromer and J R Gallagher Philadelphia—p 663
 Id Precordial Pain Review of Four Hundred Cases R L Hamilton Sayre Pa—p 666
 Controlled Versus Haphazard Methods of Applying Oblique Focal Illumination in Ocular Diagnosis with Especial Reference to Evolution of Illumination and Magnification in Examination of Anterior Segment of Eye G H Shuman Pittsburgh—p 670
 Urinary Symptoms of Extra Urinary Disease E J McCague Pittsburgh—p 675
 Diagnosis and Treatment of Some Laryngeal Conditions R F Ridpath Philadelphia—p 678

Diseases of Ductless Glands—Rowntree states that hormone treatment in the form of substitution therapy, if properly applied, as a rule is effective in its immediate results, but these are of short duration requiring frequent administration of the hormone concerned. Administration of hormones has been almost always unsatisfactory and completely ineffectual if given by mouth, except in the case of desiccated thyroid in hypothyroidism. The following hormones have proved their effectiveness clinically and can be advocated therapeutically: insulin in diabetes mellitus, desiccated thyroid or thyroxine in myxedema and early in cretinism, ampoules of pitressin in diabetes insipidus, parathyroid extract in parathyroid tetany and eschatin, the cortical hormone of the suprarenals, in Addison's disease. Eschatin has already established its value in a limited clinical trial so far as immediate results are concerned. Hormone therapy is assuming a new and important part in relation to surgery in diminishing the operative risk and mortality and by contributing to the postoperative recovery in patients afflicted with diseases of the ductless glands. The study of patients with tumors of the endocrine glands reveals, as a rule, the clinical manifestations of excessive amounts of the hormone concerned. The surgical removal of such tumors results, as a rule in the temporary appearance of a paradoxical deficiency demanding the temporary administration of the hormone concerned. Tumors of the endocrine glands emphasize the importance of the constitutional effects of tumors and call for the more comprehensive study of the problem involved, in relation to other types of tumors. The recent and important advances made in the fundamental fields have tremendously enhanced the opportunity for true service to the sick. This concerns practically all the major fields of practice, especially medicine, pediatrics, gynecology, urology and surgery.

Rhode Island Medical Journal, Providence

16 81 96 (June) 1933

- Review of Recent Scarlet Fever Literature L J Smith, City of Warwick—p 81
 Progress Toward Voluntary Sex Determination F S Hale Providence—p 84

Tennessee State Medical Assn Journal, Nashville

26 225 272 (June) 1933

- Discussion of the Reports of the Committee on the Costs of Medical Care O West Chicago—p 225
 Functional Uterine Bleeding J C Burch Nashville—p 233
 In Behalf of Roentgen Therapy H G Reaves Knoxville—p 235
 Phenol in Treatment of Tetanus W A Bryan Nashville—p 242
 My Experience with Glaucoma E C Elliott Memphis—p 247
 Anesthesia from Standpoint of the Surgeon C P Fox Jr Greenville—p 255

Phenol in Treatment of Tetanus—Bryan gives the three plans of treatment for tetanus: (1) the specific serum plan (2) the magnesium sulphate plan and (3) the phenol plan. Some physicians combine two of these plans as a routine method. The author treated six patients with phenol, all of whom recovered. Several of these had antitetanic serum before the phenol treatment was begun and during the treatment. They were placed on phenol intravenously in 1 per cent aqueous solution. The doses were usually given twice daily. Two of these cases were mild one was rather severe three were severe. The maximum dose often far exceeds 15 Gm of phenol every twenty four hours.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

8 159 226 (June) 1933

- Studies in Anemias of Infancy and Early Childhood Part IV Hemolytic (Erythronoclastic) Anemias of the Neonatal Period with Especial Reference to Erythroblastosis of the New Born L G Parsons, J C Hawksley and R Gittins—p 159
 Id Part V Hemolytic (Erythronoclastic) Anemias of Later Infancy and Childhood with Especial Reference to Acute Hemolytic Anemia of Lederer and the Anemia of von Jaksch L G Parsons and J C Hawksley—p 184
 Gastronegaly in Children H G Garland and B S Platt—p 211
 *Plasma Phosphatase in Rickets and Other Disorders of Growth Jean Smith—p 215
 Normal Hemoglobin Level During the First Year of Life Revised Figures Helen M M Mackay—p 221

Plasma Phosphatase in Rickets—Smith found the average plasma phosphatase of ten normal breast-fed healthy infants to be 0.248 unit, with a range of from 0.2 to 0.3 unit. The plasma phosphatase of a group of healthy infants fed on artificial foods, but with additional fat-soluble vitamins A and D and with water-soluble C, ranged from 0.2 to 0.36 unit, with a mean value of 0.3 unit, i e, approximately the same as that of healthy breast-fed infants. The plasma phosphatase is increased in active rickets. In a group of sixteen cases of radiologic rickets, the figures varied from 0.41 unit to 1.29 units, with an average of 0.772 unit. In a series of infants fed on artificial foods but not receiving extra fat-soluble vitamins, the average plasma phosphatase was 0.52 unit, with a range of from 0.4 to 0.702 unit. As long as these vitamins were withheld the plasma phosphatase increased, and when these were added the values fell to within normal limits. Conditions characterized by cessation of growth, such as cretinism, scurvy and achondroplasia, are associated with an abnormally low plasma phosphatase. All infants fed on artificial foods should be given additional fat-soluble vitamins within a few weeks of birth.

British Journal of Experimental Pathology, London

14 125 206 (June) 1933

- Glycine Tolerance in Experimental Shale Oil Liver Necrosis C Polson—p 123
 Epizootic Disease Occurring in Breeding Stock of Mice Bacteriologic and Experimental Observations T J Mackie C E Van Rooyen and E Gilroy—p 132
 Renal Lesions in Hypervitaminosis D Observations on Urinary Calcium and Phosphorus Excretion J Gough J B Duguid and D R Davies—p 137
 The O Receptor Complex of Bacillus Proteus 3, P B White—p 145
 Cortical Lipoid of Mouse Suprarenal After Unilateral Suprarenalctomy R Whitehead—p 149
 Calcium Content of Cerebrospinal Fluid in Normal Pregnancy and in Eclampsia D F Anderson—p 155
 Blood Group Distribution in Eastern Counties of England M Penrose and L S Penrose—p 160
 *Immunologic Studies with Virus of Psittacosis S P Bedson—p 162
 Hay Fever I A Study of Reagin Allergen Mixtures D Harley—p 171
 Filtration of Rift Valley Fever Virus Through Graded Collodion Membranes J C Broom and G M Findlay—p 179
 So Called Reversed Selective Bacteriostasis L P Garrod—p 182
 Nitrogen and Vitamin Requirements of Bacillus Typhosus P Fildes G P Gladstone and B C J G Knight—p 189
 Filtration of Virus of Borna Disease Through Graded Collodion Membranes W J Elford and I A Galloway with an appendix by J E Barnard—p 196

Immunologic Studies with Virus of Psittacosis—The investigations of Bedson bring out that the serums of persons convalescent from psittacosis possess no demonstrable neutralizing power but will fix complement in the presence of a psittacosis antigen. Similarly the serums of hyperimmunized guinea pigs contain considerable antibody demonstrable by complement fixation or agglutination but only a low neutralizing power. The author discusses the value of the complement fixation reaction in the diagnosis of psittacosis. Virus that has been rendered inactive by means of formaldehyde can evoke a considerable degree of immunity in the mouse. Virus treated with solution of formaldehyde in wood alcohol and water can be steamed for twenty minutes without much loss of its immunizing power whereas steaming alone has a deleterious action.

British Medical Journal, London

1 1091 1138 (June 24) 1933

- Anemia in General Practice L J Witts—p 1091
 Health of Antimony Oxide Workers T Oliver—p 1094
 Infra Red Rays Comfort and Health I Hill—p 1096
 *Rehalational Anesthesia Method of Utilizing Recent Advances in Anesthetic Administration J Halton—p 1097
 *Combined Sclerosis Without Anemia Treated by Intensive Iron Therapy Case W Sargent with an introduction by W Harris—p 1100
 Water Excretion as Measure of Equilibrium with Environment D N Parfitt—p 1102

Rehalational Anesthesia—During the past two years, Halton has evolved a technic of rehalational anesthesia, which takes its place between perhalation with the ordinary mask and rebreathing into a bag. The apparatus consists of a small cylinder of oxygen and a J size carbon dioxide sparklet which are strapped together and tubes from which are brought to a Y-piece, whence a further tube leads the gases to the mask. A 4 ounce ether drop bottle with a dropper delivering an even drop in any position, and a modified Ogston mask. A section of motor car inner tube slipped over the frame takes the place of the towel or lint which Ogston suggested, a short length of metal tube is clipped to one of the uprights, and the gases are by this means, led to the depths of the mask. Ether, chloroform and ether mixture or ethyl chloride can be employed. With anesthesia fully established, the carbon dioxide is turned off and the patient is evolving and rebreathing his own carbon dioxide from the mask chamber. Respirations are deep and full, and, when there is a slight tendency to cyanosis, sufficient oxygen is turned on to counteract this. It will be found that ether can be dropped almost as sparingly as chloroform. No freezing of the gauze will take place, provided the drops are not directed constantly to one portion of the mask, and, unless a deep level of anesthesia is required, when the whole of the gauze is moist the drops should be directed to the sides of the mask. A constant and regular ether dropping is essential as deep levels of anesthesia are reached much more rapidly than in open administration. For recovery the patient is given six full breaths of carbon dioxide and is allowed to inhale, with the resultant increased respiration, an atmosphere rich in oxygen. When atropine only has been used in premedication, the patient leaves the operating room phonating with his essential reflexes present and is usually awake in a further sixty to ninety minutes. When morphine is used, the final recovery is delayed. The method depends only on facts, the actual technic can therefore be varied infinitely to suit the individual requirements of any anesthetist.

Intensive Iron Therapy in Combined Sclerosis—Sargent presents a case of combined sclerosis without anemia. On admission to the hospital there was marked weakness in both arms and legs, and the patient could not walk without help. Any attempt to walk was accompanied by gross ataxia. Indefinite areas of anesthesia were found on the forearms, legs and abdomen. The abdominal reflexes were all absent. Knee jerks and ankle jerks were exaggerated, and a bilateral extensor response was present. There was an additional loss of all positional sense in the toes, and the sense of vibration was much impaired in both legs. A test meal showed complete achlorhydria in all specimens and an excess of mucus in the resting juice, which was of small quantity. The stomach emptied in one and a half hours. The blood count was red cells 4,960,000 per cubic millimeter, white cells 7,000 per cubic millimeter, hemoglobin, 88 per cent, color index, 0.9, and the size of the cells was normal. The cerebrospinal fluid tests were all normal, and a roentgenogram of the spine revealed no lesion. The patient was treated with palliative measures such as massage and exercises, for five weeks, but he became steadily worse. Pills of ferrous carbonate 150 grains (9.85 Gm.) a day, were now given, massage was discontinued and no other accessory treatment was allowed. There was an increase in the strength in the legs about three weeks after the iron treatment was begun, the tinglings grew less and the girdle pains disappeared. When walking was first attempted it was impossible to keep the patient on his feet because of his gross ataxia and loss of the positional sense of the feet. Ten weeks after beginning treatment he was able to go home and to walk a little unsteadily by himself. He has been attending the hospital at regular monthly intervals since and can now walk well without

aid, even being able to stand for short periods with his feet together and eyes closed without falling. His ataxia is still noticeable when he is made to turn round quickly. All abdominal reflexes and ankle jerks are present, the knee jerks are not exaggerated, and areas of anesthesia are now difficult to detect. The vibration sense in the legs has improved. The blood picture is red cells, 5,460,000 per cubic millimeter, hemoglobin, 95 per cent. A bilateral extensor response is still present. The patient continues to take a daily dose of 100 grains (6.5 Gm.) a day of pills of ferrous carbonate and has now been under treatment for more than six months.

Journal of Laryngology and Otology, Edinburgh

18 389 456 (June) 1933

- Early or Late Operation in Acute Mastoiditis D Guthrie—p 400
 Id C A S Ridout—p 408

Lancet, London

1 1217 1270 (June 10) 1933

- Complications of Specific Fevers with Especial Reference to Scarlet Fever and Measles C R Box—p 1217
 Some Observations on Preoperative Procedure E R Flint—p 1221
 Treatment of Hay Fever by Desensitization and with Acid H Beckman—p 1227
 Treatment of Acute Appendicitis R J M Love—p 1229
 *Method for Enumeration of Blood Platelets J N Cumings—p 1230
 Acute Traumatic Mastoid Abscess M Yeatsley—p 1232
 *Operation for Spondylolisthesis B H Burns—p 1233
 Agranulocytic Angina with Septicemia G S Erwin—p 1234

Method for Enumeration of Blood Platelets—In his modification of Flossner's method of counting blood platelets, Cumings adds mercuric chloride to Tyrode's solution without the dextrose to give a strength of 1:10,000 in order to prevent any bacterial growth, five parts of this are added to one part of 1 per cent sublimite saline solution immediately before use and without filtering either fluid. Blood is obtained from the ear by pricking through a drop of the diluting fluid and allowing the blood to flow directly into the diluting fluid without using any local pressure. The contents are thoroughly mixed with a rod or glass tubing coated with petrolatum. The exact degree of dilution is that which, by experience, is shown to give the greatest ease of enumeration. The ear is carefully dried and blood taken for a red blood corpuscle count. A drop of the diluted blood is placed in a counting chamber, and the coverslip applied. After the red cells and platelets have settled the platelets are counted against the red cells, a thousand of the latter being enumerated. It is convenient to have about 150 red cells in a field. The author has not observed any clumping of the platelets, red cell clumping has occurred only in one case of hemorrhagic purpura, and no red cell degeneration has been observed in some hundreds of counts, even when kept for twenty-four hours. His observations confirm those of Flossner and have given a total count of about 400,000 per cubic millimeter after keeping the diluted blood for three hours. The author suggests adding brilliant cresyl blue to Tyrode's solution as an alternative to Toison's solution for the diluting of blood in performing red and white blood corpuscle counts.

Spondylolisthesis—Burns inserted a graft from the front through the body of the fifth lumbar vertebra and the fifth intervertebral disk into the sacrum in a case of spondylolisthesis. The patient, a boy aged 14 had had pain in the small of the back and in the calves after jumping from a height three months previously. Roentgenography showed that there was a fracture in the laminae of the fifth lumbar vertebra between the roots of the upper and lower articular processes, and that the body of the fifth lumbar vertebra had slipped forward. A plaster bed having been made previously, the operation was performed. The patient was placed in the Trendelenburg position, and the abdomen was opened by a left paramedian incision. The intestine was packed off and an incision was made through the posterior parietal peritoneum. The anterior aspect of the fifth lumbar vertebra was cleared by blunt dissection and the left common iliac vein was gently retracted upward and carefully guarded. A hole was drilled almost vertically downward. A graft was then taken from the tibia and driven home with a punch. The posterior peritoneum was then sutured and the abdomen closed. The convalescence was uneventful. The boy was allowed to walk two months after the operation and had no pain. It is possible that the inter

vertebral disk is not the ideal situation for a graft, in that the graft might become absorbed, but roentgenograms show that this is not the case after seven weeks. Should it become absorbed, a steel pin can be used instead.

1 1271 1326 (June 17) 1933

Complications of Specific Fevers with Especial Reference to Scarlet Fever and Measles II Respiratory Lesion C R Box—p 1271
Infections of Hand N L Eckhoff—p 1276
Etiology of Nocturnal Enuresis W H de B Hubert—p 1281
Nature of Hematopoietic Factor in Marmite Lucy Wills—p 1283

1 1327 1378 (June 24) 1933

Complications of Specific Fevers with Especial Reference to Scarlet Fever and Measles III Dealing Chiefly with Surgical and Pyogenic Lesions C R Box—p 1327
*Intestinal Tuberculosis Its Early Diagnosis, Treatment and Prevention A I G McLaughlin—p 1333
Rheumatic Affections of Tendon and Muscle Attachments (Tendinitis) G Kahlmeter—p 1338
Occupational Asthma with Reference to Wool Sensitivity H H Moll—p 1340

Intestinal Tuberculosis—McLaughlin divides the methods of early diagnosis of intestinal tuberculosis into radiologic, clinical and laboratory. He groups the methods of treatment under four headings: heliotherapy and high vitamin diet, dietetic, medicinal and symptomatic, and surgical. He believes that the prevention of secondary intestinal tuberculosis depends primarily on the early diagnosis and successful treatment of the pulmonary tuberculosis. The patients should be warned against swallowing the sputum, as this is the chief mode of infection of the intestine in human tuberculosis. Constipation should be avoided and any catarrhal condition of the intestine should be treated. Patients who show achlorhydria should receive regular doses of hydrochloric acid, although the acid has little or no antiseptic action against tubercle bacilli, when achlorhydria is present the ulcers are said to occur higher in the ileum and jejunum. The general resistance of the patient to infection should be built up by an adequate diet and particularly by a large supply of vitamins A, C and D, in the form of cod liver oil and tomato juice or orange juice. All patients with pulmonary tuberculosis should be given the high vitamin diet as a routine measure. At Ray Brook Hospital, every patient with pulmonary tuberculosis takes half an ounce of cod liver oil and 3 ounces of tomato juice after each meal, and as a result the incidence of tuberculous enteritis is considerably lower than before the procedure was adopted.

Medical Journal of Australia, Sydney

1 727 756 (June 17) 1933

*The Quantitative Wassermann Reaction as a Guide to Treatment of Syphilis Preliminary Communication J Love and Hildred M Butler—p 727
History and Elimination of Hookworm at Nauru Short Note A M B Grant—p 733
Indications for and End Results of Tonsillectomy R H Beltington—p 734

Wassermann Reaction and Syphilis—In an endeavor to make the Wassermann test more strictly quantitative, Love and Butler increased their dilutions of the patient's serum to include 1:40, 1:80 and 1:160 as well as the 1:5, 1:10 and 1:20 already in use. In order to save both time and reagents all serums were first tested in a dilution of 1:5 only. Those showing complete fixation at that dilution were then tested over the whole range. No evidence of zone phenomenon was obtained in 5000 tests in which each serum was tested in dilutions of 1:5, 1:10 and 1:20. When fixation was not complete in any tube it was found sufficiently accurate to determine with the naked eye the proportion of cells unlysed by comparing the tube with the controls and thus to determine in what dilution complete fixation would have occurred. When readings were made in this way, and also from dilutions at shorter intervals they were so close as to lead the authors to believe that this possible error would not significantly alter the results. The reciprocal of the degree of dilution giving complete fixation was the Wassermann index of the serum tested. A chart similar to a Verne's chart was prepared on which the Wassermann index was plotted against time the treatment given also being shown. In this way a chart was obtained that indicated the severity or degree of syphilization of the patient at any given time and the progress of the case and the response to treatment. The authors present ten such charts showing the progress of

the Wassermann reaction when treatment is instituted at the various stages (that is, primary, secondary or tertiary) of the disease, and they think that they furnish them with a plain and graphic guide to treatment.

Chinese Medical Journal, Shanghai

47 441 544 (May) 1933

Researches Concerning Typhus in North China S Gajdos and J Tchang—p 441
Cultivation of Tubercle Bacilli in Vitro and in Vivo Within Diffusion Membrane and Earthenware Vessel P C Hou—p 452
*Tuberculosis of Mesenteric Lymph Glands Simulating Organic Disease of Stomach H C Chang—p 456
Sensory Test for Chinese Recognition of Chinese Characters Traced on the Skin of Soldiers with Brain Injuries S B Wang and R S Lyman—p 468
Medical and Dental Education L G Kilborn—p 483
Family Limitation Among Educated Chinese Married Women Study of Practice and Attitudes of One Hundred and Twenty Women H D Lamson—p 493

Tuberculosis of Mesenteric Glands—Chang gives the histories of six cases of tuberculosis of the mesenteric lymph nodes in which serious gastric complications occurred and intrinsic organic disease of the stomach was simulated. Accurate diagnosis was impossible prior to the exploratory laparotomy or postmortem examination. Complete recovery took place in all four patients in whom relief of the pyloric obstruction followed gastro-enterostomy. There seemed to be little doubt that one of the other patients would have been similarly benefited had he consented to the operation. The other death was attributable to disseminated tuberculosis. Serious complications do not necessarily impair the prospect of a clinical cure, provided they are successfully combated. As the treatment of this condition, like the treatment of tuberculosis in general, depends mainly on good hygiene and dietary management, it necessitates, as a prerequisite, early correction of any dysfunction of the digestive tract. Laparotomy offers the only chance of relieving gastric obstruction of this type and should always be resorted to, not only for diagnostic but also for therapeutic possibilities. This generalization applies to most cases of pyloric obstruction regardless of the apparent etiology. Removal of the diseased gland is not necessary and may be attended with risk. It was not attempted in any of the author's four patients who were operated on.

Japanese Journal of Gastroenterology, Kyoto

5 136 (April) 1933

Estimation of Free Hydrochloric Acid in Human Gastric Juice (Studies on Acidimetry of Gastric Juice II) M Hori—p 1
Error of Titrated Total Acidity of Human Gastric Juice (Studies on Acidimetry of Gastric Juice III) M Hori—p 13
*Influence of Gallbladder Oddi's Muscle and Duodenum on Outflow of Bile Report I Injection of Visceral Nerve Poisons and Pituitrin K Shi—p 19
*Id Report II Observations Made After the Injection of Some Substances in Duodenum K Shi—p 26
Influence of Fat Soluble Vitamin on Amounts of Cholesterol Bodies in Bile in Rabbits S Kusaka—p 31

Outflow of Bile—According to the experiments of Shi, the intravenous injection of from 0.3 to 0.4 cc of a 1 per cent solution of pilocarpine hydrochloride causes in dogs an increase of the internal pressure of the gallbladder, of the excretion of bile of the tension of the duodenum and of Oddi's muscle, and then of the outflow of bile containing bladder bile. The intravenous injection of atropine causes a decrease of the internal pressure of the gallbladder, of the excretion of bile, of the tension of the duodenum and of Oddi's muscle, and then of the outflow of the bile. The intravenous injection of epinephrine causes a temporary decrease in the internal pressure of the gallbladder, in the tension of the duodenum and of Oddi's muscle and a temporary outflow of liver bile. The intravenous injection of solution of pituitary causes a slight increase of the internal pressure of the gallbladder, depression of the tension of the duodenum and of Oddi's muscle, and an outflow of bile containing bladder bile.

Outflow of Bile After Injection of Substances into Duodenum—Shi states that the infusion of milk or peptone into the duodenum of a dog causes an increase of the internal pressure of the gallbladder, a depression of the tension of Oddi's muscle and of the duodenum and, therefore, an outflow of bladder bile. The infusion of the duodenum with magnesium

sulphate causes a depression of the tension of Oddi's muscle and of the duodenum and then the outflow of bile containing bladder bile, without causing an increase in the internal pressure of the gallbladder

Paris Medical

2 105 132 (Aug 5) 1933

- Blood Dyscrasias in 1933 P. Harvier and J. Bernard—p. 105
 Hemopathies Due to Benzene P. Lmile Weil—p. 112
 Acute Subleukemia Starting with Hemogenohemophilic Syndrome P. Merklen, H. Gounelle and L. Israel—p. 116
 Blood Aplasias P. Chevallier—p. 119
 Diagnosis of Hemolytic Icterus E. Benhamou—p. 126

Benzene Poisoning—Lmile-Weil states that the increased use of benzene in industries has resulted in an increase of benzene poisoning. Benzene intoxication from inhalation of the benzene vapors most frequently results in injury to the blood and the hematopoietic organs. The injury may cause not only hypoplasias of the erythrocytic or leukocytic system but hyperplasias of the leukocytic system as well. The anemias produced by benzene vary from latent or light forms to severe cases of pernicious anemia. The author thinks that the hemorrhagic tendency which often accompanies the light anemias of benzene intoxication possibly contributes to the production of the anemia, and that at all events it is a prodromal sign of a syndrome of a grave anemia with purpura hemorrhagica, which is best called aleukemia hemorrhagica. This is the most common form of severe benzene intoxication. It presents no differences from the hemorrhagic purpura caused by gold salts or arsphenamine. Death occurs within a few days in the severe cases, when the poisoning is less severe, slow recovery may occur. Benzene poisoning may have a very early effect on the leukocytes. Persons in apparent good health, having no clinical signs of anemia, may have a slight leukopenia, and cases have been reported presenting a light anemia and a severe leukopenia, but no true agranulocytic syndrome has been described as yet. The occurrence of hyperplasias as a result of benzene intoxication is rare, but both acute and chronic cases of leukemia have been reported. Lignac was able to produce some cases of leukemia and some of lymphosarcoma in mice by administration of benzene. This contradictory effect of benzene does not seem so strange in view of the fact that roentgen rays may produce either aplasias or hyperplasias of the blood and hematopoietic organs.

Prensa Medica Argentina, Buenos Aires

20 1729 1772 (Aug 9) 1933 Partial Index

- Cisternal Therapy. Technic of Injections in Cisterna Magna M. R. Castex, L. E. Ontaneda and F. M. Solanet—p. 1729
 Therapy of Posterior Deviation of Uterus E. Nicholson—p. 1745
 Cerebrospinal Meningitis Caused by Pfeiffer's Bacillus Case. M. Margulis—p. 1749
 Influence of Anesthesia on Alkali Reserve S. Schere—p. 1751

Influence of Anesthesia on Alkali Reserve—Schere reviews the literature on the role of anesthesia in the changes of the alkali reserve observed after surgical interventions. He found that all authors agree that general anesthesia, especially if performed with chloroform, brings about an intoxication and a state of shock producing a lowering of the alkali reserve. Various theories, such as the liberation of phosphoric acid by the muscles and its storage in the blood with free elimination of alkaline ions, the increased production of lactic acid, and the inhibition of the respiratory center under the influence of anesthesia, have been given as an explanation for the appearance of postoperative acidosis. However, there has not been a satisfactory explanation, but the authors agree that it is a "non-compensated" acidosis. Cannon believes that there exists a great parallelism between the fall of the blood pressure and the diminution of the alkali reserve. Schere believes that the arterial hypotension which follows general and spinal anesthesia is the cause of acidosis observed after surgical interventions performed with those types of anesthesia. The author studied the postanesthetic changes of the alkali reserve in children. He determined the maximal, mean and minimal values of the alkali reserve in thirty-five children, immediately before and after the administration of the anesthetic, and also twenty-four hours and forty-eight hours after the operation. The operations performed in those children were of various kinds. Ether was used in twenty-two cases, chloroform in eight, and local anesthesia in five. The author concludes that general anesthesia

by ether or chloroform produces a great lowering of the alkali reserve, more pronounced in the case of chloroform than in that of ether, and that the return of the acid base equilibrium to normal is more rapid with ether than with chloroform, being normal forty-eight hours after the operation. This does not happen in children who receive chloroform anesthesia. Local anesthesia does not produce any variation of the alkali reserve.

Beitrage zur klinischen Chirurgie, Berlin

158 113 224 (Aug 16) 1933

- Arthropneumoroentgenography J. Oberholzer—p. 113
 Diagnosis and Results of Treatment in Injuries of Menisci E. Spira—p. 157
 Nontuberculous Psors Abscesses in Childhood F. Klages—p. 161
 Contribution to Ambulatory Treatment of Varicose Ulcers of Leg J. Marx—p. 181
 Acute Appendicitis in Advanced Age W. Arnold—p. 187

Pneumoroentgenography of Knee Joint—Oberholzer states that an ordinary roentgenogram of the knee joint gives but little information regarding the menisci, Hoffa's fat bodies, the crucial ligaments and the relations of the capsule. Arthroendoscopy after the injection of nitrogen gas, as practiced by Bircher, has not given the desired result. The so-called positive contrast mediums capable of producing shadows in a roentgenogram, such as iodized oils have the drawback of giving shadows too thick for a finer study of anatomopathologic details. Injection of negative contrast mediums, such as nitrogen, oxygen or atmospheric air, proved of value in recognition of lime and cartilaginous loose bodies, as well as in recognition of Hoffa's disease. In order to combine the advantages of both the positive and the negative contrast mediums, a combination of the two was attempted. A small amount, 2 or 3 cc., of the positive contrast medium was injected into the knee joint and distributed by massage, after which the joint was filled with oxygen gas. The positive medium coats the joint capsule, the menisci, the crucial ligaments and the cartilage. The introduction of the negative medium further intensifies the delineation of structures. Of the positive mediums experimented with, sodium iodide was found too irritating to the synovial membrane, while sodium bromide did not give sufficient contrast. Iodized oils were incapable of fine division and frequently clumped into masses which gave rise to erroneous interpretations. Iopax proved to be too painful. Methiodal seemed to possess all the qualifications required. It is nonirritating, is capable of fine division and gives satisfactory shadows. In Bircher's clinic, 700 arthropneumoroentgenograms have been carried out by the use of the combination of methiodal and filling of the joint with oxygen gas. The author concludes that pneumoroentgenography of the knee joint is a safe procedure. It gives a clear presentation of the structures of the normal knee. It enables one to recognize in a high percentage of cases injury to the menisci, the crucial and lateral ligaments, the joint capsule and the Hoffa bodies. The diagnosis of Laeven's disease and of osteitis dissecans is placed on a more secure basis. Diseases of the capsule can be diagnosed with frequency. Follow-up observations with this method demonstrated a partial or complete regeneration of a resected meniscus in a majority of cases after a lapse of about two years. The method has its limitations and not all the types of trauma or joint disease are rendered recognizable by it.

Ambulatory Treatment of Varicose Ulcers of Leg—Marx reports on the use of the rubber sponge in the ambulatory method of treatment of varicose ulcers of the leg. The method consists in cleansing the ulcerated area and covering it with a layer of dry gauze one finger thick over which a rubber sponge, reaching for two finger breadths beyond the ulcerated area, is applied. The sponge is secured in place by an elastic bandage reaching from the toes to the knee. The patient is encouraged to walk and to exercise his legs. The dressing is changed once every two days. The skin in the neighborhood of the ulceration remains dry because of the absorbing quality of the rubber sponge. Circulation in the limb is improved because of the muscular activity and the effect of elastic compression by the sponge on the venous return. The method was applied in thirty-four patients with indolent ulcers which proved refractory to treatment with rest in bed or Unna's paste boot. Complete healing was brought about in all cases in from three to twelve weeks.

Acute Appendicitis in the Aged—According to Arnold, acute appendicitis in the aged is a relatively frequent disease. Among 2,257 patients operated on for acute appendicitis in the clinic of H. Klose in Danzig, 172 were past the age of 50, an incidence of 7.6 per cent. Old age, therefore, is no argument against a diagnosis of appendicitis, on the contrary, one should always consider it in instances of obscure abdominal disease in the old. One should not be misled by an incomplete picture and the frequent absence of a severe general reaction. Accurate history and a careful evaluation of all symptoms constitute the most important diagnostic safeguards against error. Acute appendicitis of the aged appears frequently as a destructive gangrenous process. The grave pathologic observations are often in striking contrast to the relatively mild clinical picture. The author found that a number of his patients presented a clinical picture similar to that seen in the young. In some, the disease picture was characterized by the predominance of local symptoms over the general, and the gravity of the situation was frequently unrecognized by the doctor and the patient. This was particularly true of obese patients. In some, the general symptoms of an acute attack found so little expression that the patient became aware of the situation only after perforation had taken place. Finally, there was a group in which correct diagnosis was hardly possible and which was recognized only at operation. These patients are often operated on because of a diagnosis of ileus. Contrary to the experience of other authors, the so-called neoplastic form of appendicitis, as well as appendicitis in a hernial sac, did not play a prominent part in the author's material. Conservative treatment of appendicitis in the aged is even less justified than in the young, and early operation is productive of excellent results just as in appendicitis of the young. An age limit does not exist for the early operation. The author is opposed to inhalation anesthesia and finds spinal anesthesia best suited to these cases.

Klinische Wochenschrift, Berlin

12 1241 1272 (Aug 12) 1933

- Vitamin B. P. György, R. Kuhn and T. Wagner—p 1241
*Pancreatropic Action of Extracts from Anterior Lobe of Hypophysis. K. J. Anselmino, L. Herold and F. Hoffmann—p 1245
Roentgenologic Aspects of Coronary Sclerosis. G. W. Parade and F. Kuhlmann—p 1247
Electrocardiographic Aspect of Cardiac Fibrillation in Sudden Death from Heart Failure. F. Penati—p 1249
*Increase in Rest Nitrogen in Serious Cases of Poisoning. L. Popper and A. Schechter—p 1252
Determination of Basal Metabolism by Means of Read's Formula. H. Olmes—p 1252
Uricolysis. W. Schuler—p 1253
Vasomotor Reaction of Cerebrospinal Fluid with New Salt Medium (Titro-mastic Reaction). A. Axen—p 1254
Nicotine Content of Smoke in Cigarettes With and Without Nicotine. H. Schlossmann—p 1255
Methylglyoxal in Urine and in Cerebrospinal Fluid of Nurslings with Nutritional Disturbances and Toxic Symptoms and in Experimental B₁ Avitaminosis of Dogs and Rats. A. Geiger and A. Rosenberg—p 1258

Pancreatropic Action of Extracts from Anterior Lobe of Hypophysis—According to Anselmino and his associates, clinical as well as anatomic-pathologic observations indicate a relation between the anterior hypophysis and the pancreas. In acromegaly, for instance, there is frequently a considerable increase in the pancreas, and in young diabetic patients a shrinkage of the eosinophil cells of the anterior hypophysis has been noted. In order to gain more insight into this interrelation, the authors resorted to animal experiments. Young rats were given from six to seven injections of extract of the anterior lobe of the hypophysis and then were killed. The histologic examination of the pancreas of these animals revealed an enlargement of the islands of Langerhans and a fusion of several island complexes, also an increase in young newly formed islands. The authors are as yet not in a position to state whether or not these changes are the result of the action of a special substance. They only gained the impression that the pancreatropic substance, although it largely resembles the gonadotropic and the thyrotropic substances in its physical and chemical properties, does not seem to be identical with them.

Increase in Rest Nitrogen in Serious Cases of Poisoning—Popper and Schechter point out that in cases of severe

poisoning the rest nitrogen of the blood is sometimes increased to a degree that does not correspond to the clinical aspects. They determined the rest nitrogen of a number of patients with severe poisoning. In the majority of cases the poisoning was caused by carbon monoxide, compound solution of cresol or barbituric acid preparations. In the patients in whom the poisoning was mild, the rest nitrogen values were within normal limits while in the comatose patients the rest nitrogen reached from 90 to 100 mg per hundred cubic centimeters, but after a short while, sometimes within a few hours, the rest nitrogen decreased again to 40 mg. The rise in the rest nitrogen was always accompanied by an increase in the urea content. However, indican and the other substances retained in cases of renal insufficiency were not increased. The authors point out that in patients in whom the increase in rest nitrogen is the result of renal insufficiency, as for instance in poisoning caused by corrosive mercuric chloride, the increased rest nitrogen requires a much longer time to recede than in the cases studied by them, and renal disturbances were not demonstrable in their patients. They show that the increase in the blood urea is not caused by a disturbance in the elimination of urea but is rather due to the fact that the organs of urea production and storage, that is, primarily the liver, give off larger amounts. But since there are no signs of impairment of the liver the authors conclude that the increase in the urea, as well as in the rest nitrogen, is caused by a disturbance in the central nervous regulation.

Medizinische Klinik, Berlin

29 1067 1098 (Aug 4) 1933

- *Acute Diarrheal Disturbances of Nurslings. B. de Rudder—p 1067
Estimation of Cardiac Disorders in Practice of Sport Physician. E. Jökl and G. W. Parade—p 1070
Pathogenesis of Pyuria in Nurslings. M. Frank—p 1074
*Agranulocytosis Following Brain Trauma. A. Bingel—p 1076
Bilateral Ovarian Blastoma of Brenner Type. E. Weinzierl—p 1078
Necrosis of Myocardium Following Status Epilepticus. M. Winternitz—p 1080
Primary Tuberculosis of Brachial Biceps. K. Gebhardt—p 1081
Eye as Test Object for Radium Action. W. Altschul—p 1082
Electrolyte Threshold Determination in Blood Serum. W. Dopfer—p 1083
Experiences with Anesthesia Induced by Intravenous Injection of a Sodium Salt of a Barbituric Acid Derivative. O. Honcamp—p 1085

Acute Diarrheal Disturbances in Nurslings—De Rudder says that three factors should be considered in the treatment of a nursling with diarrhea: the general condition of the child, the symptoms accompanying the diarrhea and the probable etiology of the diarrhea. In discussing the general condition the author points out that the age of the nursling is of great importance. Dyspepsias occurring during the first three months of life are always serious. With advancing age the conditions become more favorable and the treatment more simple. Moreover, it is not the same whether nutritional disturbances develop in a breast-fed infant or in a bottle-fed infant. Dyspepsias of breast-fed nurslings are generally much milder than those of bottle-fed nurslings, and the author emphasizes that dyspepsia in a breast-fed infant is never an indication for the termination of nursing at the breast. The seriousness of a dyspepsia also depends on the fact whether it develops in a well nourished child in a dystrophic one, or in one with atrophy. Of the symptoms that accompany diarrhea the author discusses loss of turgor, vomiting and signs of toxicosis. A knowledge of the etiology is likewise important in the proper management of dyspepsia. The author discusses alimentary dyspepsia, which may be caused by errors in care and feeding, and infectious dyspepsia of the parenteral type developing in the course of infections outside the intestinal tract, for instance of the respiratory tract or of the ear. It is evident that this type of dyspepsia requires a different treatment than does the alimentary type. The author designates as enteric the dyspepsia in which the infection is localized in the intestinal tract and he points out that this form may be caused by many different pathogenic organisms. The treatment of all acute diarrheas of nurslings should be done in three stages: first a hunger period during which weak tea and later thin gruels are given, then the period of curative diet, during which the nursling receives diluted milk with the addition of carbohydrates or of protein preparations, and finally the change to a normal diet. The author gives advice on the treatment of the various forms of dyspepsia.

Agranulocytosis Following Brain Trauma — Bingel reports the history of a man, aged 59, in whom agranulocytosis became manifest following a traumatic hemorrhage of the brain, and who died a short time later. The anamnesis, which revealed a past history of articular disturbances and of excessive drinking, indicates that two years previous there had already been symptoms of agranulocytosis. The necropsy showed a beginning cirrhosis of the liver and, since there are indications for a connection between liver and bone marrow (liver therapy of anemia), it is likely that the cirrhosis of the liver played a part in the etiology of agranulocytosis. Moreover, it is known that an agranulocytic reaction frequently occurs in articular disturbances. However, the author is unable to say whether in this case there was a causal connection between the agranulocytosis and the articular disturbances, and he only wishes to call attention to such a possibility. He assumes that in the reported case the agranulocytosis was elicited by the brain trauma by way of the mobilization of a latent infection (attack of chills on the evening of the day of a fall on the head). The rapid succession of trauma and agranulocytosis indicates their causal connection, and death would thus be a result of the accident.

29 1099 1130 (Aug 11) 1933

- Hoarseness and Its Treatment A Bruggemann — p 1099
Experimental Studies on Tumors M Reiss — p 1100
*Influence of Moor Baths on Absorption of Iodine Through Skin and Its Fate in Organism H Anthes and I Salzmann — p 1103
Malformation of Hypophysis in Fetus with Dropsy E J Kraus — p 1104
Paradoxical Water Intake (So Called Negative Perspiratio Insensibilis) E Urbach — p 1105
*Treatment of Acute Articular Rheumatism and of Similar Infectious Diseases by Means of Painting with Tannin Spirits and by Injection of Turpentine Preparation A Streubel — p 1106
*Simple Procedure for Determination of Blood Sedimentation A Steiger — p 1108
Familial Disposition to Heart Block Contribution to Pathogenic Connection Between Adams Stokes and Cheyne Stokes Syndrome B Dlugacz — p 1109
Finger Sucking During Childhood M Schaechter — p 1111
Thyrotropic Hormone of Anterior Lobe of Hypophysis and Tissue Metabolism H Druckrey — p 1112
Psychologic Remarks to Goethe's Theory of Colors M Lowy — p 1113
Treatment of Leukorrhea by Means of Aluminum Salts H Wolf — p 1116

Moor Baths and Absorption of Iodine Through Skin — The moor baths employed by Anthes and Salzmann were prepared by mixing 50 Kg of bath moor with 50 liters of hot water, so that the bath had a temperature of 39 C (102.2 F), to which from 5 to 50 Gm of potassium iodide was added. A bath lasted twenty minutes. Baths without the addition of moor or of iodine salts served as controls. The iodine content of the blood and of the urine was determined, and it was found that after a moor bath to which potassium iodide had been added the iodine content of the blood was increased. The maximum of the iodine content of the blood was reached in from one and a half to three hours. After four and a half hours the values were again normal. The concentration of the baths had no influence on the iodine content of the blood. The iodine was not eliminated in the urine, and it is probable that it was deposited in the tissues.

Treatment of Acute Articular Rheumatism — Streubel maintains that acute articular rheumatism is the result of a streptococcal infection, the particular streptococcus being not yet identified. He shows that, in patients in whom articular rheumatism follows a tonsillitis, painting of the tonsils with alcohol or with spirit of tannin is effective. This procedure is used to prevent further dissemination of bacteria and of their toxins. The alcohol or the spirit of tannin is applied three times daily and counteracts the fever and the articular pains within a comparatively short time. However, the increase in the defensive power of the organism is also an important factor in the treatment of articular rheumatism. Since a specific serotherapy is not possible, the author recommends non-specific irritation therapy and states that he has obtained good results with the intramuscular injection of a turpentine preparation. The injections are given every two or three days into the gluteal muscle. In adults 1 cc. is administered and in children 0.05 cc.

Simple Method for Determination of Blood Sedimentation — Steiger employs a leukocyte pipet for his simplified sedimentation test. His method is as follows. Citrate solution

is drawn up to mark 5 of the leukocyte pipet and is then blown out. Then the blood, which he advises taking from the finger rather than from the ear, is drawn up to mark 1 and is blown into the drop of citrate solution. This mixture is stirred and drawn up again to mark 1. Then the pipet is closed by means of paraffin and is put in the vertical position, and after one or two hours the result is read. The readings of course do not correspond to those of the standard method, for a pipet of 60 mm cannot show a sedimentation of 50 mm. However, the author thinks that in the end it is the same, whether the sedimentation is given according to Westergren with 20 and 40 mm or according to this "micromethod" with 15 and 28 mm. He stresses the following as the advantages of his micromethod. It is simple, dispenses with complicated apparatus and can be employed in small children. Moreover, since a small amount of blood is sufficient, puncture of a vein is unnecessary, which is important, because the sedimentation test, to be valuable, requires repetition.

Monatsschrift für Kinderheilkunde, Berlin

58 329 408 (July 27) 1933

- *Blood Picture in Icterus Neonatorum Familiaris Gravis and Its Diagnostic Significance J Altitzoglou — p 329
Gallstones During Early Childhood T Eckardt — p 352
Remarks on Grosser's Paper on 'Aseptic Meningitis' and Meningeal Encephalitis K Hassmann — p 362
*Significance of Constitutional Influences for Pathogenesis of Nutritional Disturbances in Nurslings J C Schippers — p 364
Insulin Ketonuria During Childhood W Sick and M Weichsel — p 383
Blanching Phenomenon in Scarlet Fever Produced by Placental Extract O Tezner and Helene Goldhamer — p 388
Permeability of Blood Cerebrospinal Fluid Barrier and of Blood Brain Barrier Y Yamoka — p 391

Blood Picture in Icterus Neonatorum Familiaris Gravis — Altitzoglou points out that, among the various forms of icterus in the newborn, icterus gravis is of especial importance because of its serious consequences for the family. The statement that a similar case has already been observed in the family, particularly if in the same generation, is of greatest significance for the diagnosis. However, isolated cases are possible, and it is important that the first case occurring in a family be recognized, the more so since an early diagnosis will make possible therapeutic measures which are often helpful in a disturbance that frequently ends fatally. The author shows that erythroblastosis is a characteristic symptom of icterus neonatorum familiaris gravis. Since erythroblastosis is physiologically present in the newborn, it may be difficult to estimate this symptom unless it occurs in an extreme form. However, erythroblastosis has a pathologic significance if it increases during the first few days of life. In doubtful cases it is advisable to count the normoblasts in addition to taking into consideration the anamnesis and the clinical symptoms. The author cites normal values from the literature and from his own observations. He emphasizes that the early diagnosis of this form of icterus is important because an early diagnosis will make possible a blood transfusion, which may cure this frequently fatal disorder.

Constitutional Influences and Nutritional Disturbances — Schippers' report is based on observations on 691 nurslings with severe nutritional disturbances. He points out that according to leading pediatricians the causes of nutritional disturbances are classified into three groups, alimentary, infectious and constitutional. He thinks that too many manifestations are ascribed to constitutional factors purely because of the want of an adequate explanation. He tries to determine the role of constitutional factors in the pathogenesis of serious nutritional disturbances, and he evaluates particularly the significance of so-called constitutional hydrolability. His definition of constitution coincides more or less with that of von Vershuer, according to which it includes all factors that determine the status of the nursing at birth. He designates these factors as endogenic and, in contradistinction to it, terms all others, that is those that influence the nursing after birth, as exogenic. He finds that endogenic factors played a part in about 25 per cent of the nurslings with nutritional disturbances. He thinks that this figure may be too low, since the data regarding the nearly 200 cases with fatal outcome are insufficient. Nevertheless, constitutional factors play a part in

the smaller number of cases. He discusses constitutional hydro-lability and concludes that it is the result and not the cause of the reduced resistance in nurslings and that the two have the same cause. Hydrolability exists because the child is ill and not vice versa. The author states his theory about hydro-lability as follows. Hydrolability does occur occasionally as a diathesis, but as such it does not represent a deciding factor in the etiology of nutritional disturbances. He believes that as a symptom of nutritional disturbances hydrolability may be serious, and that it is a sign of grave changes.

Munchener medizinische Wochenschrift, Munich

86 1201 1236 (Aug 4) 1933

- Heredity, Race Hygiene and Population Politics. Heredity and Constitution in Leukemia. P. Morawitz —p 1201
Race Hygiene and Education. F. Siebert —p 1203
Significance and Treatment of Retention of Urine. A. Krecke —p 1204
Experiences in Comparison of Various Methods of Treatment of Post-operative Tetany. W. Rieder —p 1207
Clinical Diagnosis of Infarct of Cardiac Muscle. H. Lotze —p 1211
*Early Sign of Infection with Chickenpox. O. Lade —p 1215
Epilepsy During Childhood. J. Zappert —p 1215
Apple Treatment of Chronic Fermentative Dyspeptic Enteritis. P. Bogdanovic —p 1217
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*Apple Diet in Young Nurslings and Small Children. Elisabeth Urbanitzky —p 1219
Improved Apparatus and Indications for Bloodless and Bloody Cupping Methods. B. Aschner —p 1220
Treatment of Bronchitis with Ether According to Bier. Modification According to Revesz. H. Strehl —p 1222
Inadvisability of Massage and Passive Movements in New Injuries of Bones and Joints. E. Enderlen —p 1223

Early Sign of Chickenpox.—Lade has found that many children have a diarrheal or an extremely thin stool two weeks before the manifestation of the eruption of chickenpox, and he thinks that this observation should be an inducement to isolate such a child. The diarrheal stool has also a certain significance for the still disputed question of the port of entry of the chickenpox virus. The author thinks that it indicates the intestinal route.

Raw Apple Diet in Intestinal Disorders.—Hartwich states that Heisler's report on the favorable effect of the raw apple diet on intestinal disorders was taken up almost exclusively by pediatricians, who corroborate its beneficial effect in intestinal disorders of children while it found little application in the treatment of intestinal disturbances of adults. He therefore reports his observations with the apple diet on adults. He treated forty-six cases of gastrogenic diarrheas, acute enteritis and gastro enteritis, dysentery and paratyphoid, and on the basis of his observations he recommends the raw apple diet for the treatment of such cases. He found that the diarrhea is promptly arrested and that the stools soon become negative in infectious intestinal disorders. He states that he employed the grated pulp of ripe, peeled raw apples. The apple diet usually satisfied the hunger and thirst of the patients completely and it became necessary to give some tea during the night only in extremely dehydrated cases. The daily quantity of apples varied between 0.5 and 1.5 Kg. In most cases the apple diet was followed by a day of restricted diet and after that, the patients were given the general hospital diet. The author discusses the various theories of the mode of action of the apple diet.

Apple Diet in Young Nurslings and Small Children.—Urbanitzky points out that the favorable experiences obtained with the Heisler-Moro apple diet in intestinal disturbances of children beyond the nursing age induced her to try the apple diet also in nurslings. But because apples that are suitable for the raw apple diet are not available the year round she used a pure apple powder. She employed it in ten nurslings of less than 6 months in twelve of less than a year and in twenty-five of less than 2 years. The disturbances were of various types and origins being acute and subacute nutritional disturbances, infectious enteritides, nutritional disturbances of parenteral origin and manifestations of intoxication. Disorders of such diverse origin responded equally well. The youngest nurslings first received tea with a 4 per cent addition of the apple powder and later their milk mixture with an addition of from 5 to 6 per cent of apple powder. With this treatment the stools usually became normal on the third or fourth day.

The number of calories was reduced to about half during the treatment in the severest cases and to about two thirds in the less severe cases. In older nurslings and in small children, the apple powder had to be given only for two or three days, and sometimes only for one day. In cases of intoxication, protein milk was given in addition to the apple powder, beginning with the second or third day.

Wiener klinische Wochenschrift, Vienna

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- What is Accomplished by Roentgen Examination in the Diagnosis of Adhesive Pericarditis? E. Zdrinsky —p 993
Distribution and Elimination of Thorium Following Injection of Thorium Dioxide Solution. T. Leisner —p 994
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Prognosis in Suppurative Meningitis. E. A. Pribram —p 1001
*New Therapeutic Principle in Exudative Disturbances. O. Ried —p 1001
Radium Therapy. H. Fuhs —p 1003
Dermatoses of Puberal Period and Their Treatment. R. O. Stein —p 1009

Contralateral Adductor Reflex in Absence of Patellar Tendon Reflex.—Herschmann noted a peculiar reflex phenomenon in a man, aged 48, who was operated on because an atypical syringomyelia was assumed. The patient had a spastic paresis of the legs, which has been improved since the operation although there still exist, particularly in the region of the left lower extremity, considerable hypertonia, spontaneous movements and a spastic-paretic disturbance. The Babinski and the Oppenheim reflexes are positive on the left side and the achilles tendon reflexes are increased on both sides. The percussion of the achilles tendon elicits not only a plantar flexion of the foot but also a lively twitching of the adductor group of the same side. The patellar tendon reflex of the left side is greatly increased. Percussion of the region of the medial condyle elicits on the left side a lively adductor reflex, which partly involves the adductor group of the right side. An attempt to produce the adductor reflex on the right side results in a slight twitching of the adductors of the right side, whereas the group on the right side responds hardly at all. This proves that the crossed adductor reflex predominates. However, the phenomenon to which the author desires to call attention is that the patellar tendon reflex of the right side is absent. Percussion of the patellar tendon of this side produces in the adductor group of the left thigh an extremely lively contraction. Thus, the phenomenon in question is a crossed adductor reflex, which is produced by the percussion of the patellar tendon of the side on which the patellar tendon reflex is absent. The author observed the same phenomenon also in another patient in whom neurologic examination revealed the abolishment of the patellar tendon reflex, of the adductor reflex and of the achilles tendon reflex on both sides. He discusses various theories of the pathogenesis of the crossed adductor reflex.

New Therapeutic Principle in Exudative Disturbances.—Ried calls attention to biologic actions shown by inorganic substances, particularly by certain salts after they have been irradiated. The type of action is dependent on the quality and the quantity of the rays on the aggregate state of the substance (solid, fluid, gaseous, crystalline or colloidal) during irradiation and on the distance between the source of rays and the substance. Irradiation experiments were performed primarily on salts the chemical state of which was not changed by the irradiation. The author thinks that the new biologic action of irradiated salts is due to the energy emitted by the salts which he assumes to be beta rays. The result of biologic experiments on animals induced him to attempt a therapeutic utilization of irradiated salts. He employed them in the form of baths. A concentrated solution of potassium salt was exposed for fifteen minutes to the light of a mercury vapor lamp following a preliminary exposure to red rays. This irradiated solution was then used for baths that had a concentration of 0.05 per cent a hydrogen ion concentration of 7.75 and a temperature of 28°C. (95°F.) and lasted from fifteen to twenty minutes. Occasionally partial or total pricks were

employed instead of the baths, the concentrations of the packs varying in different cases. The author thinks that neither the temperature nor the concentration of the baths would be capable of producing the therapeutic effects that were obtained and that, as subsequent sweating was avoided in order not to eliminate again the traces of salt which had been adsorbed, sweating can also be excluded as a therapeutic factor. He concludes that the therapeutic action of the baths must be due to the ray action of the salt solution. He reports the histories of several patients in whom about twenty baths produced considerable improvement in conditions such as polyarthritides and spondylarthritides and in a case of exophthalmos following a septic disorder. He believes that the baths with the irradiated solution of potassium salt will not remain without effect in other exudative processes. At any rate, in articular processes of various origins that prove refractory to other treatments the baths with the irradiated salt solution usually give good results.

Zeitschrift für Tuberkulose, Leipzig

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- Measurement of Venous Pressure in Pulmonary Tuberculosis E Gabe—p. 2
 Pulmonary Tuberculosis and Circulation Determination of Circulation Time F Warnecke—p. 7
 *Early Tuberculous Infiltrate Particularly Problem of Its Treatment H. Alexander—p. 12
 Transitory Character of Infiltrations F. Hochstetter—p. 17
 Pathologic Anatomy of Pulmonary Infiltration (Collateral Inflammation) in Tuberculosis of Children J. Zeyland—p. 23
 *Role of Phrenic Exeresis Within Scope of Surgical Methods of Treatment of Pulmonary Tuberculosis T. Naegeli and H. Schulte-Tigges—p. 29
 After Treatment of Endopleural Division of Strands Gert Zimmermann—p. 33
 Sequelae After Unilateral Particularly Left Sided Exclusion of Phrenic Nerve A. Lowenstamm—p. 36
 Cause of Pulmonary Respiration in Pneumothorax A. Albert—p. 39
 Cultural Demonstration of Tubercle Bacilli in Blood in Necropsy of Patient with Carcinoma H. Kong—p. 40
 Type Differentiation of Tubercle Bacilli on Culture Mediums Ruth Pallaske Eber—p. 42
 Formation of Auto-Antibodies in Tuberculosis Ö. Fischer—p. 50
 Percutaneous Immunization Against Tuberculosis in Guinea Pigs J. Burgers—p. 56
 Tuberculin Reaction in Tuberculosis of the Aged R. Mayer—p. 60
 Influence of Heredity in Pathogenesis of Tuberculosis K. Schubert—p. 62
 Systematic Development of Care for Tuberculous Patients O. Glogauer—p. 71
 Results of Roentgenologic Examinations of Youths and Students in Kiel in Course of Three Years Busing—p. 78

Early Tuberculous Infiltrate—Observations from 1926 to 1931 convinced Alexander that patients with early tuberculous infiltrates should receive institutional treatment as early as possible. He found that, if all external irritation is kept away from them, spontaneous and permanent improvement may be expected in a large percentage of the patients. Beginning cavernization and even completely formed round caverns do not always necessitate collapse therapy immediately. Careful clinical observation, particularly examination of the sputum, will generally reveal, within the first or at the latest within the second month, whether an expectant attitude can be assumed or whether active therapy is advisable. If these principles are followed, the prognosis of the early infiltrate is favorable, that is, there are prospects of recovery in approximately 90 per cent of the cases.

Phrenic Exeresis—Naegeli and Schulte-Tigges evaluate phrenic exeresis on the basis of their experiences in 314 cases. In discussing the technic of exeresis they point out that, in case of considerable adhesions, twisting of the nerve should not be done with too much force, as this may result in injuries, but resection should be resorted to and care should be taken that the branches of the nerve are also removed. The authors observed the complications of phrenic exeresis, against which some observers have warned only in mild forms and generally only for a short time after the operation. The authors cannot corroborate the observation that phrenic exeresis is most effective in processes of the lower lobes but rather found that those in the median portion of the lung are influenced most favorably. They think that, if after two or three months the exeresis has not produced satisfactory results, other surgical methods should be resorted to. They advise more use of the temporary exclusion of the phrenic nerve by means of crushing, freezing or alcohol injection. Crushing of the phrenic nerve is particularly

helpful for temporary exclusion. It interrupts the nerve conduction for from four to six months, provided that eventually existing accessory phrenic nerves also are excluded.

Bibliotek for Læger, Copenhagen

125 255 288 (July) 1933

- *Continued Investigations on Circulatory Conditions in Varices and Their Connection with Ulcer and Eczema of Leg H. Haxthausen—p. 255
 *Investigations on Kidney Function in Patients with Heart Ailments A. Brems and F. Nielsen—p. 266

Circulatory Condition in Varices—Haxthausen states that the results of his later as well as his earlier investigations point to a close etiologic relation between filtration edemas and cutaneous complications in varices and that an explanation of the pathogenesis of these complications on this basis harmonizes with clinical experiences regarding their appearance.

Kidney Function in Heart Diseases—Brems and Nielsen found that the results of creatinine and urea clearance determinations and of Strauss's concentration test agreed both in normal persons and in patients with renal or cardiac disorders. Most patients with marked heart insufficiency and a considerable number with symptoms of stasis without marked insufficiency give creatinine and urea clearance values below the lowest normal limit. There was no constant agreement between the clinical judgment of the condition of the heart and the results of the kidney function tests. No certain difference was seen in the kidney function in cardiac patients with increased and with normal blood pressure.

Ugeskrift for Læger, Copenhagen

95 833 854 (Aug. 3) 1933

- *Clinical Significance of Diastasia IV Differential Diagnosis in Different Forms of Jaundice on Basis of Diastase Elimination J. Foged—p. 833
 Cholelithiasis (Stone in Choledochus) with Accompanying Pancreatic Disturbance (Subchronic Pancreatitis or Pancreatic Stasis) K. Germer—p. 838
 *Acute Febrile Syphilitic Meningitis C. Clemmesen and G. E. Schrøder—p. 841
 Dermography A. Yde—p. 842
 Exploration Ointment Dk. H. Wulff—p. 845
 New Hemostatic J. O. Jacobsen—p. 845
 Gymnastic Therapy (German Points of View) A. Faber—p. 846

Clinical Significance of Diastasia—Foged made 1247 analyses of the urinary diastase in 175 patients with different forms of jaundice. In patients with hepatitis and cancer of the pancreas the diastase concentration does not exceed the normal, but pathologically increased values are seen in more than half of the patients with stone in the choledochus. In cases of jaundice presenting diagnostic difficulties an increased urinary diastase is thus considered as a probable indication of stone in the common bile duct, although a normal urinary diastase does not testify against this condition.

Acute Febrile Syphilitic Meningitis—Clemmesen and Schrøder's patient aged 25 presumably infected with syphilis ten months earlier gave the picture of acute meningitis with fever. Changes were found in the spinal fluid, and the Wassermann reaction was positive in both blood and spinal fluid. The symptoms disappeared on administration of antisyphilitic treatment. The authors state that acute syphilitic meningitis, while rare, occurs in children and adults, most often between the age of 20 and 30 generally appearing from two to twelve months after the infection, although a latent period of several years has been observed. With timely antisyphilitic therapy the prognosis is usually good. In cases of meningitis, syphilis should be borne in mind as the possible cause and the Wassermann test made on the spinal fluid.

95 855 878 (Aug. 10) 1933

- Results of Tonsillectomy S. Heiberg—p. 855
 Histamine Iontophoresis H. Heidemann—p. 863
 *How Early Can Pregnancy Be Diagnosed in Urine? H. Nielsen—p. 864

How Early Can Pregnancy Be Diagnosed?—Nielsen believes that with the Friedman-Schneider test it is possible to establish pregnancy before the first cessation of menstruation. Apparently conception can occur directly after the end of menstruation and even during the menstrual period. Whether or not the gonadotrope hormone eliminated in the urine during pregnancy is always derived from the placenta cannot yet be determined.

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THE EPIDEMIOLOGY OF LOBAR PNEUMONIA

A STUDY OF THE PREVALENCE OF SPECIFIC STRAINS
OF PNEUMOCOCCI IN THE NASOPHARYNX OF
IMMEDIATE FAMILY CONTACTS

WILSON G. SMILLIE, M.D.
BOSTON

An attempt was made in this study to clarify certain points in relation to the epidemiology of lobar pneumonia.

1 Is any specific type of pneumococcus more prevalent in the immediate family contacts of a case of lobar pneumonia due to that particular type of pneumococcus than in the population at large?

2 Is there any difference in the epidemiologic behavior of the different types of pneumococci?

3 Do certain specific types of pneumococci that are more or less prevalent in the normal population pass more readily from the sick to the well than from normal person to normal person?

4 Are there any measurable environmental factors, such as overcrowding, economic or social status, or seasonal variations, that may influence the ready transfer of a specific type of pneumococcus from the patient to his immediate contacts?

5 Do variations in the individual, such as the age factor or the existence of an acute infection of the respiratory tract in the family, have any appreciable effect on the distribution of specific types of pneumococci to the family contacts of a case of pneumonia?

In an attempt to determine these points, a study was made of the correlation of the prevalence of the various specific types of pneumococci in the throats of the family contacts with the homologous type of pneumococcus isolated from the sputum in a given case of lobar pneumonia. If one type of pneumococcus is much more prevalent in the nasopharynx of immediate family contacts than in the general population, it might indicate that this specific strain was spread readily through direct contact of the patient with a normal person, and this would be suggestive evidence that the particular strain had epidemiologic significance. If, however, the various specific strains of pneumococci are just as prevalent in the community at large as in the throats of individuals in contact with a case of pneumonia due to homologous strains, it would seem that these strains are spread as

readily from normal person to normal person as from the sick to the well and have little or no epidemiologic significance.

The unit in these studies has not been the individual or the community but the family. Family epidemics of lobar pneumonia are not a common phenomenon, but the same is true of several other communicable diseases spread by direct contact. A study of the immediate family contacts of a case of pneumonia would seem to be the logical approach to determine the mode of spread of the pneumococcus in the community.

A number of observations have been made of the prevalence of specific types of pneumococci in the nasopharynx of immediate family contacts of pneumonia patients. Notable among these studies are those of Stillman,¹ Rosenau, Felton and Atwater,² and Jacobson.³ These authors were concerned with the familiar original pneumococcus types of Dochez and Gillespie, namely, specific types I, II and III and the heterogeneous group IV. Recently, Cooper⁴ and her co-workers have subdivided the various strains of pneumococci that comprise group IV into a considerable number of specific types. Since a large proportion (from 30 to 40 per cent of all the cases of lobar pneumonia) are caused by pneumococci of group IV, it seemed timely not only to supplement the work of the previous observers in relation to the epidemiology of types I, II and III but also to accumulate data in relation to contacts with cases of pneumonia that are caused by the various types of pneumococci of the heterogeneous group IV.

Only lobar pneumonia was considered in our studies. The diagnosis in each case was made by the clinical picture and by the determination of the type of pneumococcus obtained from the sputum of the patient. The occurrence of the actual cases of pneumonia was reported to us by the various hospitals and private physicians in the city of Boston and environs. The sputum was obtained from each patient and the type determined by standard methods. (The laboratory diagnosis of approved laboratories in the larger hospitals was accepted in some instances.) After the probable causal agent of the case of pneumonia had been determined, the family of that patient was visited and nasopharyngeal cultures were obtained from as many of the immediate family contacts of the patient as possible. Cultures were taken only if there had been contact with the patient during the previous seven days. This interval gives one ample margin, since various authors have shown that a pneumococcus strain, when once estab-

- 1 Stillman E. G. J. Exper. Med. 24: 651 (Dec.) 1916.
- 2 Rosenau M. J., Felton L. D. and Atwater R. M. Am. J. Hyg. 463 (May) 1926.
- 3 Jacobson M. A. J. Prev. Med. 1: 259 (Jan.) 1927.
- 4 Cooper Georgia, Edwards Marguerite and Rosenstein Carolyn. J. Exper. Med. 49: 461 (March) 1929. Cooper Georgia, Rosenstein Carolyn, Walter Annabel and Peizer Lenore. ibid. 55: 531 (April) 1932.

This study was conducted under the joint auspices of the Commonwealth Fund of New York, the Massachusetts State Department of Health and the Harvard School of Public Health.
Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

lished, usually persists in the nasopharynx of the individual for a considerable period.

The nasopharyngeal swab taken from each contact was placed at once in a tube of hormone blood broth, brought to the laboratory as quickly as possible, and given a quick incubation of three hours at 38 C. This blood broth (0.8 cc.) was then injected into the peritoneal cavity of a mouse. At the same time, a hormone blood agar plate was streaked with material from the original blood broth culture. The mouse was killed after twenty-four hours (if it had not already died) and the heart's blood and peritoneal fluid were streaked on hormone blood agar plates. Strains of pneumococci were isolated and identified in the customary manner. The specific type was determined by serum agglutination, the technic being used that was recommended by Cooper,⁴ who kindly furnished the specific serums. Serums were available for only types I to XIX inclusive at the time the experiment was begun, but these serums are sufficient for the purpose, since they include the great proportion of types of pneumococci that were encountered.

Some of the strains of pneumococci from the original broth culture were avirulent for the mice, or sometimes death of the mouse occurred from other organisms. In these instances it was necessary to return to the blood agar plate which had been made directly from the throat cultures. Thus, some strains of pneumococci were obtained from the plates when no pneumococci had been obtained from mouse cultures. These strains were isolated and identified in the usual manner. A frequent cross check was made also between the type of strains isolated from the mouse culture and that from the original blood agar cultures. My associates and I determined, as have other workers in this field, that there is an agreement in practically every instance between the strains isolated by the two methods.

CONTROLS

Nasopharyngeal cultures were made of a control group of persons in the same manner as in the group of contacts. The controls were selected as nearly as possible from the same economic and social groups as were the contacts, and the cultures were taken during the same seasons of the year. The control group practically equals the contact group in numbers.

EPIDEMIOLOGIC DATA

The study was continued through a period of twelve months to determine the effect of any seasonal variation. Few cases of lobar pneumonia occurred during the summer months, so that the number of contacts that were obtained during this period is small. Information was obtained from each patient with pneumonia and from his contacts in relation to the general economic status and the living conditions that might produce overcrowding and malnutrition. The history of present or recent attacks of acute diseases of the respiratory tract in the family was obtained, including colds, influenza and bronchitis, as well as a history of any previous attack of pneumonia in the patient or in his family.

The virulence (to a mouse) of each strain of pneumococcus that was isolated from a contact or control person was also determined.

TYPES OF PNEUMOCOCCI ISOLATED FROM ACTUAL CASES OF LOBAR PNEUMONIA

One hundred and seventy-three cases of pneumonia were observed during the twelve months period. Since

the primary interest was centered in the contacts of these patients and not in the patients themselves, the information in regard to the patients will be summarized briefly. The data concerning the strains of pneumococci that were isolated from the sputum of these patients are given in table 1.

TABLE 1—*Specific Types of Pneumococci (According to the Cooper Classification) Isolated from One Hundred and Seventy-Three Cases of Lobar Pneumonia*

Type of Pneumococcus	Number of Patients in Each Group	Deaths
Total	173	29
I	48	8
II	34	9
III	16	3
IV	5	1
V	8	3
VI	3	0
VII	8	0
VIII	12	1
IX	2	0
X	3	0
XI	1	0
XII		
XIII	2	0
XIV	1	0
XV	1	0
XVI		
XVII	3	1
XVIII	7	0
XIX	1	1
Higher types	8	1
Negative	10	1

Table 1 shows that pneumonia due to all types of pneumococci were represented in the series of cases except types XII and XVI. Not one of the groups contains a considerable number except type I and type II. The dispersion is quite striking, for no other group contains more than 5 per cent of the total number except type III (9 per cent) and type VIII (7 per cent).

TABLE 2—*Mortality Rate of One Hundred and Seventy-Three Cases of Pneumonia*

Type	Number of Cases	Per Cent of Total Cases	Deaths	Case Mortality Rate per Cent
Type I	48	28	8	16.7
Type II	34	20	9	26.4
Type III	16	9	3	18.7
All other types	75	43	9	12.0

The data of table 1 have been summarized into the four conventional groups of pneumococci (table 2) and it was found that the percentage distribution of the pneumonia due to the various groups is similar to that found by other workers in this field. A somewhat

TABLE 3—*Age Distribution in the Cases of Pneumonia*

	Birth to 19 Years		20 to 39 Years		40 to 60+ Years	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Type I	13	1	18	2	17	5
Type II	9	0	18	1	17	8
Type III	2	0	6	0	8	3
All other groups	28	3	27	3	20	

higher proportion fall in group IV, but this is probably due to the fact that the cases were not limited to hospital admissions but taken from the general practice of physicians as well. The case mortality rate of pneumonia due to type I is much lower than one would expect, but this is due to the fact that many of these patients were given type I pneumococcus serum early.

in their illness. This study has been reported by Heffron.⁵ The low fatality rate in type III pneumonia cases is probably due to the fact that most of these patients were in the lower age groups, for, as Blake⁶ has shown, type III pneumococcus spares the young but is particularly fatal to the aged. The distribution of the cases of pneumonia by age groups is shown in table 3.

When the pneumonia cases are subdivided further into ten-year age periods, one finds an almost equal distribution of the cases in each group—with from twenty to thirty-five cases in each ten-year age period (except the group of 60 years and over, eleven cases). In general, the mortality rate increased with age, the lowest mortality rate was in the group of 20-29 years inclusive, 4.2 per cent, and the highest mortality rate in persons over 50 years, 45 per cent. Pneumonia due to types I, II and III strains of pneumococci were distributed throughout all age groups. None of the specific strains that comprise group IV had any predilection for one age group but were also widely distributed. Type III was extraordinary in that, of twelve patients under 55 years of age who developed the disease, none died, whereas, of four persons over 55 years of age who had type III pneumonia, three died.

So far as these data go, there is no evidence that poor economic status or overcrowded living conditions played any definite part in either the incidence or the mortality from lobar pneumonia.

Seasonal influences, however, played a definite role in the incidence of the cases of pneumonia. Each case was allocated according to the date of onset of first symptoms.

The seasonal distribution of the cases was as follows:

Summer	July 1 to September 30, 12 cases
Autumn	October 1 to December 31, 36 cases
Winter	January 1 to March 31, 64 cases
Spring	April 1 to June 30, 59 cases

No single type of pneumococcus was prevalent in one month only or in one season only, but rather there occurred a general distribution of the various types throughout the seasons.

THE PREVALENCE OF PNEUMOCOCCI IN THE NASOPHARYNX OF INDIVIDUALS IN IMMEDIATE CONTACT WITH CASES OF LOBAR PNEUMONIA

A total of 582 persons who had been in recent intimate familial contact with cases of lobar pneumonia were studied. This represents an average of over three contacts per patient. In addition, nasopharyngeal cul-

TABLE 4—Prevalence of All Types of Pneumococci

	Contacts	Controls
Persons in whom pneumococci were found in nasopharynx	347	212
Persons in whom no pneumococci were found in nasopharynx	235	251
Total	582	463
Per cent positive	59.6	43

tures were made on 493 controls taken from the population at large. As far as possible, a representative distribution throughout the various seasons was obtained. The prevalence of pneumococci of all types in contacts and controls is given in table 4.

Seasonal influences played a definite rôle in the distribution of the pneumococci in both controls and contacts.

In table 5 is given the proportion of contacts and of controls that harbored pneumococci in the naso-

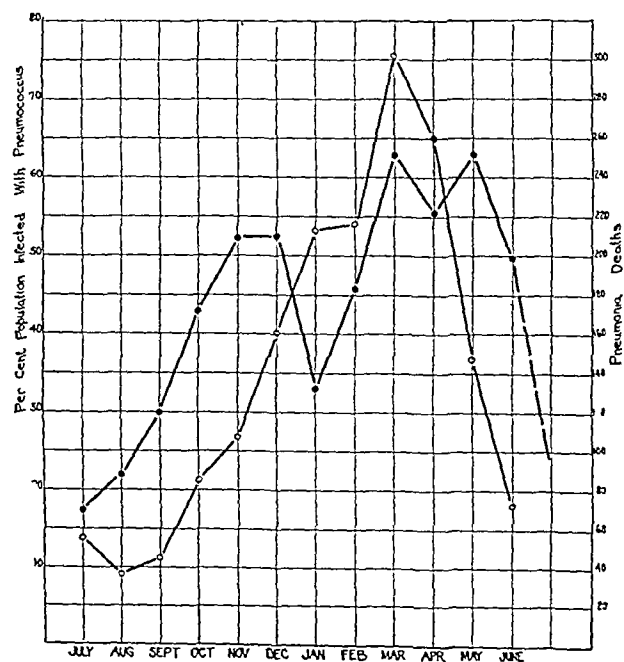
TABLE 5—Distribution of Pneumococci During the Four Seasons of the Year

	Summer		Autumn		Winter		Spring	
	No of Persons	Per Cent Positive	No of Persons	Per Cent Positive	No of Persons	Per Cent Positive	No of Persons	Per Cent Positive
Contacts	22	36	190	57	218	56	212	67
Controls	63	15	62	48	184	48	194	43

pharynx during the various seasons of the year. The striking features of this table are that:

1 The controls show a consistently lower percentage of positive cultures throughout the seasons.

2 Pneumococci are much less prevalent in both groups in the summer months than during the remainder of the year.



Seasonal variation of pneumococci in pneumococcus carriers (indicated by black dot) compared with pneumonia deaths (indicated by white dot) in Massachusetts in 1931-1932.

The percentage of positive cultures during each month for the combined groups of contacts and controls has been calculated in the accompanying chart. There is justification for combining the two groups, as subsequent discussion will bring out. This chart of monthly incidence shows a low incidence of pneumococci in the summer and a rapid increase in the early fall, followed by an apparent decline, with a second peak in the early spring. This is strikingly similar to the curve of incidence of acute diseases of the respiratory tract in the United States that has been demonstrated by Townsend and Sydenstricker⁷ and others.

PREVALENCE OF SPECIFIC TYPES OF PNEUMOCOCCI

A summary of the results which indicate the prevalence of the various types of pneumococci that were isolated from contacts and from controls, is given in

⁵ Heffron, Roderick. *New England J. Med.* 207: 13 (July 28) 1932.

⁶ Blake, F. G. *Ann. Int. Med.* 5: 673 (Dec.) 1931.

⁷ Townsend, I. C. and Sydenstricker, Edgar. *Pub. Health Rep.* 42: 99 (Jan. 15) 1927.

table 6 For the purpose of comparison, the distribution of the types of pneumococci that actually produced lobar pneumonia is inserted in the table

Several illuminating facts are brought out by table 6 There occurs a very general distribution of all types of pneumococci in both the contact and the control group Type III is far the most prevalent, but there is no significant difference in its prevalence in the two

TABLE 6—*Distribution of Pneumococci in Cases of Pneumonia in Family Contacts and in a Control Group*

Type of Pneumococcus	Cases	Contacts	Controls	Cases per Cent	Contacts per Cent	Controls per Cent
I	48	11	1	27.7	3.2	0.5
II	34	18	3	19.6	2.2	1.4
III	16	87	67	9.2	23.1	37.0
IV	5	4	2	2.8	1.2	1.0
V	8	8	2	4.6	2.3	1.0
VI	3	42	21	1.7	12.1	9.9
VII	8	10	5	4.6	2.9	2.3
VIII	12	7	3	6.9	2.1	1.4
IX	2	8	7	1.1	2.3	3.3
X	3	11	9	1.7	2.2	4.2
XI	1	8	4	0.5	2.3	1.9
XII	0	2	2	0.0	0.9	1.0
XIII	2	10	6	1.1	2.9	2.8
XIV	1	11	5	0.5	3.2	2.5
XV	1	6	10	0.5	1.7	4.6
XVI	0	0	2	0.0	0.0	1.0
XVII	3	16	7	1.7	4.6	3.3
XVIII	7	52	34	4.0	15.0	11.0
XIX	1	2	2	0.5	1.6	1.0
Higher types	8	20	20	4.6	8.6	9.4
Negative	10	23	212			
Total	173	552	495			

groups (25 per cent in the contacts and 33 per cent in the controls) Types VI and XVIII are quite prevalent—from 10 to 15 per cent of the total in the contact group These strains were equally prevalent in the control group The most striking thing in the whole table is that all types from type III to type XIX inclusive show an almost exactly equal prevalence of each type in the controls and in the contacts If one excludes types I and II, therefore, this table would seem to represent the normal distribution of pneumococci in the community during the year of 1932

Only types I and II show any variation from the general rule Type I is six times more prevalent in the contact group than in the control group, and type II is three times more prevalent The great discrepancy that exists between the number of the contact group that harbors types I and II as compared with the control group is brought out if one considers only those persons that had positive cultures In table 7 is tabulated the distribution of pneumococcus types among those actually infected, e g, 347 infected contacts and 212 infected controls

TABLE 7—*Percentage of Infection with Pneumococci Among Three Hundred and Forty-Seven Infected Contacts and Two Hundred and Twelve Infected Controls*

Type of Pneumococci	Contacts		Controls	
	No of Persons	Per Cent Infected	No of Persons	Per Cent
Type I	11	3.1	1	0.4
Type II	18	5.2	3	1.4
Type III	87	25.0	67	31.6
All other types	231	66.5	141	66.4
Total	347		212	

These summaries (tables 5, 6 and 7) indicate that a group of persons in direct contact with cases of pneumonia harbor types I and II pneumococci more frequently than does the population at large All other types of pneumococci are about as prevalent in the general community as in the control groups

SEASONAL DISTRIBUTION OF VARIOUS TYPES OF PNEUMONIA

No conclusions can be drawn in regard to the seasonal distribution of each of the various types of pneumococci, since the numbers of some of the types are small As I have already noted, the general trend of all types was a low incidence during the summer, with a sudden increase in October, followed by a slow decline until about February 1, then, a rapid increase, with the greatest prevalence in March, April and May and a rapid decline in late June This seasonal variation occurred in both the contacts and the control groups This general seasonal distribution also occurred in individual specific types wherever the number was sufficiently large to be significant For example, types III, VI and XVIII were found throughout the year but were much more prevalent in the spring months No one type was limited to one season, no strain appeared suddenly in the community and then disappeared, nor was there a significant difference in seasonal variation of specific types in the control and contact groups

CORRELATION BETWEEN EXPOSURE TO PNEUMONIA DUE TO A SPECIFIC TYPE OF PNEUMOCOCCUS AND THE PREVALENCE OF THE HOMOLOGOUS STRAIN IN CONTACTS

A summary of the observations from the whole group of contacts is, of course, not so significant as a more specific analysis of the correlation between direct expo-

TABLE 8—*The Correlation Between Exposure to a Case of Pneumonia Due to a Specific Type of Pneumococcus and the Prevalence of the Homologous Type of Pneumococcus in the Nasopharynx of Contacts*

Type of Pneumonia	Total Persons Exposed	Correlated with Same Type	Per Cent of Correlation	Distribution of Pneumococci in the General Population	
				No of Persons	Per Cent
I	186	10	5.4	1	0.9
II	126	14	11.1	3	0.4
III	61	13	21.3	67	13.6
V	32	5	15.6	2	0.4
VI	6	1	16.7	21	4.3
VII	31	1	3.2	5	1.0
VIII	31	7	22.6	3	0.6
IX	15	4	31.0	7	1.4
XIV	2	1	50.0	5	1.0
XVIII	23	4	17.4	34	6.9
All others	81	0		345	
Total	594			493	

sure to a patient with a given type of pneumococcus and the prevalence of the same type of pneumococcus in that patient's contacts This analysis would tell just what proportion of individuals that have been directly and recently exposed to type I pneumonia harbor this specific strain in the nasopharynx The results of an analysis of such correlations is given in table 8

The percentage of correlation has been tabulated for each type of pneumococcus, and the distribution of that type in the control population has been given Thus of 186 persons who were in direct contact with cases of pneumonia due to type I pneumococci, 10 harbored type I pneumococci, or 5.4 per cent, whereas only 0.2 per cent of the control group harbored this strain

In analyzing table 8, it was noted that the contacts with cases of pneumonia due to pneumococci types VI, IX and XIV were so few in number that no conclusions could be drawn from the data The prevalence of homologous strains of pneumococci in contacts with

cases of pneumonia due to types VII, XVIII and possibly also type III is not significantly greater than the general prevalence of these strains in the population at large

The data for two types of pneumococci in this table are significant, namely, types I and II

Type II was more than ten times more prevalent in contacts with type II pneumonia than in the population at large, and type I was twenty times more prevalent in persons exposed to this strain. A high correlation is noted also with types V and VIII, but the numbers of persons observed is much smaller than in the first two types. Though type I, type II and type III contacts are the only ones that occur in sufficient numbers to give significant data, it may be noted that there is some significance in the fact that all types in which any correlation occurred showed a higher prevalence of that type in the contacts than in the population at large

ECONOMIC STATUS

Our criteria for measuring economic status are admittedly faulty. We have made a rough classification of the data into three economic groups: poor, fair and good. A detailed analysis of these data showed no significant distribution of any single type of pneumococcus in any single economic group but rather a strikingly even distribution of all types of pneumococci through all groups.

An analysis of the correlation tables gave no evidence of a greater tendency for a person who has poor living conditions and who develops pneumonia to infect his contacts than those who live in a more fortunate economic situation.

OVERCROWDING

The same is true of overcrowding. Again the criteria are obviously at fault. So far as these data go, however, there was no evidence that an individual living under "overcrowded conditions" is more likely to harbor pneumococci than are other persons. Furthermore, contacts with a case of pneumonia in a family in which living conditions were "overcrowded" were not more likely to harbor the specific strain which had produced the pneumonia in a person of that family than were contacts who were exposed to that particular strain under more normal living conditions.

There were exceptions to this rule, notably with type V and type III, which will be reported in detail in subsequent studies.

THE RELATIONSHIP OF ACUTE RESPIRATORY INFECTIONS IN CONTACTS WITH CASES OF PNEUMONIA TO PREVALENCE OF PNEUMOCOCCI IN THE NASOPHARYNX

It has often been suggested that when an epidemic of colds affects a family, pneumococci become established in the nasopharynx in large numbers as secondary invaders. The development of pneumonia represents simply an extension of pneumococcal infection from the upper to the lower respiratory tract. Certainly, it is not an uncommon experience for a whole family to be affected by an epidemic of colds, followed by development of pneumonia in one member of the family only.

If the epidemiologic chain of events just outlined is the usual occurrence, one would anticipate that immediate contacts of a case of pneumonia in which the family had recently been affected by an epidemic of colds would tend to show a high prevalence of the

specific homologous types of pneumococcus in those contacts who had had recent colds.

An analysis of these data shows that pneumococci were no more prevalent in the contacts suffering with colds than in the population at large (table 9).

The data in table 9 indicate that the pneumococci, considered as a group of organisms, do not play an important role in the incidence of colds.

If one studies those specific types of pneumococcus in which a correlation occurred between the presence of the type in a case of pneumonia and the prevalence of the identical strain in contacts of that case, a different picture is revealed.

TABLE 9—Prevalence of Pneumococci in Pneumonia Contacts Who Had Recently Had Colds

	Cold at Present		Recent Cold (Within 4 Weeks)		No Colds	
	No. of Persons	Per Cent Positive	No. of Persons	Per Cent Positive	No. of Persons	Per Cent Positive
Contacts	104	50	51	64	423	60
Controls	79	51	60	48	350	40

The number of contacts who had a cold and who harbored the same strain of pneumococcus as was found in the corresponding case of pneumonia is small, but the data are significant.

Table 10 shows that nearly half of the contacts who harbored the same type of pneumococcus that was found in the case of pneumonia from their family had an "acute" cold. I have already noted that these correlations are limited to a small proportion of the strains of pneumonia (table 8). The data are too few to warrant any conclusion but suggest further study.

TABLE 10—Correlation of a Specific Strain of Pneumococcus in 'Contacts with Colds' with the Same Strain of Pneumococcus Isolated from the Pneumonia Patient

Types of Pneumococci	Number of Correlations in Contacts with a Cold	Number of Correlations in Contacts Without a Cold
I	3	7
II	4	8
III	1	4
V	2	3
VI	0	1
VII	0	1
VIII	3	4
IX	2	2
XIV	0	1
XVIII	0	1
Higher types	1	1
Total	24	36

Per cent showing correlation 40

concerning the epidemiologic chain of events relating to the part played by the pneumococcus in the acute colds with subsequent pneumonia, and particularly to those cases of pneumonia which may be produced by pneumococcus strains I, II and III.

SUMMARY

The prevalence of various specific types of pneumococci has been determined in 582 family contacts of actual cases of lobar pneumonia and also in 493 controls. Cooper's classification of specific types of pneumococci—up to type XX—was used. Lobar pneumonia due to practically every type of pneumococcus was included in the series of 173 cases, though some of the higher types were infrequent.

The study was carried on through the four seasons of the year. We considered some of the environmental and other factors which may have an influence on contact infection, such as poor economic status of the family with accompanying overcrowded living conditions, seasonal variation, the age factor and the occurrence of acute colds in the family.

All the various types of pneumococci (excluding types I and II) were as prevalent in the general population as in the pneumonia contact group. Types III, VI and XVIII were encountered most frequently.

Types I and II, though responsible for more than half the cases of lobar pneumonia, were rarely encountered in the general population, but type II was three times more prevalent and type I six times more prevalent in the contact group than in the control group. This observation is in accord with the observations of other workers in this field.

Correlation tables of the prevalence of the specific homologous types of pneumococci in a case of lobar pneumonia and its family contacts indicate that the only strains that had a definite epidemiologic significance were types I and II. A fairly high correlation occurred with types V and VIII, but the numbers of persons exposed were small—thirty-two persons to type V and thirty-one persons to type VIII pneumonia.

A seasonal variation was observed in the prevalence of pneumococci in the nasopharynx of both contact and control groups, the highest incidence was noted in the early spring and the lowest during the late summer. This seasonal variation was not a peculiarity of any one type of pneumococcus.

There is no evidence from these data that poor economic conditions, with resultant overcrowding, influenced the distribution of pneumococci. Furthermore, the various specific strains were widely distributed through the various age groups.

Our evidence indicates that contacts having colds at the time of contact with a case of pneumonia did not harbor pneumococci more frequently than contacts with no colds. In some instances, however, an epidemic of acute colds in the family did seem to be a factor in the high prevalence of types I and II in contacts.

One question in relation to the epidemiology of type I and type II has not been answered by these studies, namely: Does a patient with lobar pneumonia due to type I or type II actually infect his family contacts or do these strains invade several members of a family—possibly following or coincident with a family epidemic of colds—with subsequent development of lobar pneumonia in one member of that family?

Either alternative might explain the relatively high prevalence of type I and type II pneumococci in family contacts of a case of pneumonia due to these types.

In an attempt to determine this point, we are conducting an intensive study of the families in which cases of type I and type II pneumonia occur.

CONCLUSIONS

1 In a study of over a thousand persons, type I and type II pneumococci were found to be much more prevalent in the nasopharynx in immediate family contacts of cases of lobar pneumonia due to the homologous type than in the population at large.

2 The higher types of pneumococci—types III to XIX, inclusive—were just as prevalent in the throat in the general population as in the family contacts of cases of pneumonia due to these specific types. The

types most frequently encountered were III, VI and XVIII.

3 The whole group of pneumococci was less prevalent in the late summer months than in the winter and early spring. No one type of pneumococcus showed any deviation from the general rule in seasonal distribution.

4 Poor economic conditions, with resultant overcrowding, did not, per se, increase the prevalence of any one specific type of pneumococci in contacts of pneumonia due to the homologous type.

5 The studies suggest that epidemics of family colds have some relationship to the prevalence of homologous types of pneumococci in contacts of lobar pneumonia due to type I and type II.

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TWO YEARS' STUDY OF LOBAR PNEUMONIA IN MASSACHUSETTS

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Lobar pneumonia is a cause of death outranks all other infections, except tuberculosis. Standing in seventh or eighth place among the principal causes of death, it ranks second if one considers only persons in early adult life. In the United States Registration Area for the ten years 1920-1929 there were over one million deaths from all forms of pneumonia, 52 per cent of which were due to lobar pneumonia. Few if any diseases exact such a toll at the economic prime of life. It is therefore extremely fitting that in any consideration of public health some attention should be given to this disease. Yet almost without exception it has been completely neglected save for a passing remark of regret as to the futility of its control.

Quarantine seems to offer little hope of success, owing to the relative infrequency of secondary cases. A thoughtful health officer would hesitate to recommend the extension of such a procedure, which, as can be demonstrated for other diseases, has little more merit than the respect which properly comes with age. Control through immunization as that against diphtheria or smallpox is more logical, yet unfortunately it has not as yet been found practical or effective in dealing with lobar pneumonia. Future research should brighten this otherwise somewhat dark horizon.

There remains, then, but one method that offers any promise of success, namely, an attempt to lessen the toll of life taken by this as yet unpreventable disease. It has long been recognized as a proper function of public health that the governmental agency should offer to the public through the family physician certain special aids in the diagnosis and treatment of communicable disease. The bacteriologic laboratory aids the practitioner in arriving at a correct diagnosis, serums and vaccines produced and distributed by the city or state assist him in certain specific treatments or prophylaxes. It is therefore consistent that in a properly balanced public health program some attention should be given to the aid that can be extended the

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practitioner in the diagnosis and treatment of lobar pneumonia

The diagnostic aid, viz., typing of sputum serves the useful purpose of guiding treatment, whether it is general medical or specific serum therapy, and has added much to epidemiologic knowledge concerning the pneumonias. Serums for type I and type II pneumococcus pneumonia have been available for some years but were not extensively utilized, owing to their relatively low potency. In 1924, Felton¹ evolved a method of concentrating these serums so that large doses of immune bodies might be administered in small volumes. This development opened a new field whereby the public health agency might aid the practitioner. In 1928 the Massachusetts Department of Public Health began to produce this concentrated type I and II antibody solution and distributed it for purposes of investigation to a few selected hospitals. When, in 1930, we took account of stock and attempted to determine whether or not the continued production and distribution of this serum was warranted, there was little or no uniformity of opinion as to the serum except that these hospitals which had used it viewed with dismay its withdrawal. Yet its withdrawal seemed almost inevitable, owing to the high cost of its production and the limited extent to which it had reached the patients most in need of it.

In the meantime, Cecil and Sutliff,² Cecil and Plummer,³ Park, Bullowa and Rosenbluth⁴ and others had shown beyond reasonable doubt that treatment of type I pneumonia with this serum reduced the mortality approximately 50 per cent, especially if such treatment was instituted within the first four days of the disease. After that time, results were not nearly so marked. The few results that we had available indicated that the serum which the department was producing was of similar potency. One criticism of the work up to that time remained unanswered. This work had chiefly been carried on in a few large, well staffed and well equipped metropolitan hospitals and had been under the immediate supervision of clinicians who had more or less specialized in this disease. Could similar results be obtained with the use of the serum in smaller and less well equipped hospitals or, even more important, in the hands of the general practitioner of medicine? If a governmental agency was to continue to supply this serum free of charge, it should be made available for the treatment of the bulk of patients who might benefit from its use. Such patients were to be found not so much in a few large metropolitan hospitals (where they usually arrived too late to have the serum be of much use) as in the smaller hospitals and the home practice of the family physicians. Furthermore, more economical methods of serum production were desirable.

It was in an effort to find an answer to these problems that a study of lobar pneumonia in Massachusetts was undertaken early in 1931 by the state department of public health. The expenses of this study have been defrayed by the Commonwealth Fund of New

York City, since the questions to be answered had a bearing in all parts of the country, particularly in rural practice. Since the costs have been carried by a private foundation, it has been possible for us in the development of the study to carry on a certain arbitrary selection, which would have been questionable if the taxpayers' money had been spent. In the conduct of the study we have had the aid of an advisory committee⁶ composed of physicians of special experience in the problems to be met. The study has been conducted under three headings, only one of which, the clinical, can be discussed here. The other parts, the epidemiologic and the statistical, under the joint direction of Dr. Wilson G. Smilie of the Harvard School of Public Health and the department staff, and the laboratory study, under the direction of Dr. Benjamin White of the State Biological Laboratories, are being reported on elsewhere. Suffice it to say here that they may shed considerable new light on previous ideas as to the modes of spread of lobar pneumonia and may aid in the production of a better and more uniformly potent serum.

The clinical trial of the serum is being made by a group of collaborating physicians selected by the advisory committee. These were picked from certain areas each centering around a hospital, the areas in turn being so selected as to give representative samples of the state. There are at present fifteen areas with a total of sixty-three collaborating physicians. While some of these physicians had had special experience with lobar pneumonia, the majority had had no more experience than came from an extensive home and hospital practice. The observations, then, represent the results that might be expected at the hands of any group of intelligent physicians who have taken the pains to acquire a working knowledge of pneumococcus pneumonia serum therapy, which was provided through a one day course on pneumonia offered by the Harvard School of Post-Graduate Medical Education. This course was open to all physicians and has since been repeated twice.

The areas have been built around hospitals in order to provide laboratory service for the typing of pneumonia sputums. The technicians of these hospitals have received one week's training in sputum typing at the Boston City Hospital or in the State Bacteriological Laboratory to make them reasonably proficient in the various methods used and, above all, to assure uniform results. In order to obtain a check on the latter, cultures of all group IV pneumococci found by these hospital laboratories (which have facilities for only types I, II and III detection) have been forwarded to the state laboratory, where they are typed to thirty-two types, thanks to the courtesy of Miss Cooper of Dr. Park's laboratory, who has furnished diagnostic serums for these higher types. A preliminary report of our experiences with typing has already been published.⁷ These results have convinced us that the typing of sputum in the hospital laboratories has been remarkably uniform and accurate indicating that this is a procedure which can be undertaken in any reasonably equipped hospital laboratory employing a reasonably well trained and intelligent technician. The Krum-

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2. Cecil, R. L. and Sutliff, W. D. The Treatment of Lobar Pneumonia with Concentrated Antipneumococcus Serum. *J. A. M. A.* 91: 2045 (Dec. 29) 1928.

3. Cecil, R. L. and Plummer, Norman. Pneumococcus Type I Pneumonia. A Study of 1161 Cases with Especial Reference to Specific Therapy. *J. A. M. A.* 97: 1548 (Nov. 22) 1930.

4. Park, W. H., Bullowa, J. C. M. and Rosenbluth, M. B. The Treatment of Lobar Pneumonia with Refined Specific Antibacterial Serum. *J. A. M. A.* 92: 1503 (Nov. 17) 1928.

5. Birelow, C. H. The Serum Treatment of Pneumonia. *New England J. Med.* 205: 242 (July 10) 1931.

6. The advisory committee consisted of Drs. E. S. Calderwood, Arthur Cushing, R. J. Lee, E. A. Locke, F. T. Lord, N. A. E. Parkhurst, Joseph Pratt, M. J. Rosenau and W. G. Smilie.

7. Heffron, Roderick, and Varley, Florence M. A. A Study of Lobar Pneumonia in Massachusetts. Methods and Results of Pneumococcus Type Determination 1931-1932. *Am. J. Pub. Health* 22: 1230 (Dec.) 1932.

wiede, Sabin and tube agglutination methods of typing have been used, with particular emphasis on the Sabin. In the state laboratory we have recently used, with considerable success and often with great saving of time, the Neufeld method of typing.⁸

Bivalent type I and II antipneumococcus serum, concentrated by Felton's methods, has been supplied to the collaborators for use in their home and hospital patients. It has been further provided that any of these collaborators would see a suspected case of lobar pneumonia with any physician in their area who might wish this serum for a patient. The cost of such consultations has been carried by the Commonwealth Fund if the patient was unable to afford the usual fee. A detailed report of all cases treated has been obtained from the collaborator.

In order to avoid delay in the administration of serum in early cases of lobar pneumonia it has been advised that treatment be begun as soon as the clinical

TABLE 1—Serum Treated Cases

Year	Number of Cases
1931	102
1932	228
1933 (to May 15)	91
Total	421

diagnosis could be made but that in no instance should serum treatment be instituted after the fourth day of the disease. The serum, all given intravenously, was administered in doses of 5, 25 and 45 cc at intervals of two hours. Any further serum therapy has been conditioned by the results of type determination. If a type I or II pneumococcus was found, further serum might be given according to clinical indications. If any other type was found, further serum was withheld. However, since over half of all lobar pneumonias in young adults are due to either the type I or the type II pneumococcus, this treatment without preliminary typ-

TABLE 2—Types of Serum Treated Cases

Type	Number
I	218
II	51
III	21
Group IV	95
Streptococci and miscellaneous	36
Total	421

Total deaths, 79 crude fatality rate 18.7 per cent

ing has seemed justifiable to save time. In certain instances when the collaborator was called in consultation the administration of the serum has been left to the attending physician. Sensitivity to serum as detected by the ophthalmic test has been determined in every instance. A positive test or a history of asthma, hay fever, eczema, urticaria, angioneurotic edema or hypersensitiveness to horse serum or dander has been considered a contraindication for serum therapy.

To date, 421 cases of lobar pneumonia have been treated by sixty-three collaborators, as shown in tables 1 and 2.

A group of 349 cases of pneumococcus lobar pneumonia typed at the state laboratory but not treated

with serum has been collected. This group has been obtained in part by following up sputums sent to the laboratory for typing and in part by follow-up by the state district health officers of many cases of home and hospital treated lobar pneumonia within their several districts. The case fatality rate in this series may be seen in table 3, where it will be noted that home treated cases had a lower rate than hospital cases.

TABLE 3—Typed Cases of Pneumococcus Lobar Pneumonia (Due to All Types of Pneumococci) Not Serum Treated

	Total	Fatal Cases	Case Fatality Rate per Cent
Hospital cases	20*	4	20.0
Home cases	143	24	16.8
Total	349	71	20.3

Among the 349 untreated cases were 85 due to pneumococcus type I (about half were home and half were hospital cases). Of these 22 patients died giving a case fatality rate of 25.9 per cent. This control group is still small but it does afford some standard with which the treated cases may be compared.

In table 4 are shown the results of serum therapy in pneumococcus type I lobar pneumonia. We have included as treated cases only those patients who received more than 15 cc of serum and in whom such treatment was begun sometime during the first four

TABLE 4—Results of Serum Therapy Type I Pneumonia

	Cases	Fatal Cases	Case Fatality Rate per Cent	Average Age in Years	Average Total Dose per Patient
Treated	188	20	10.6	34.2	87.0
Untreated	85	22	25.9	34.3	

* Age distribution 11 to 81 years

days of illness. It will be noted that the case fatality rate of the treated group has been reduced to less than half that of the untreated group.

Among the 188 early serum treated type I cases blood cultures were done in 127 of which 35 or 27.5 per cent were positive. Usually pneumonias with a positive blood culture show a case fatality rate several times that of cases in which blood cultures are negative. The efficacy of the serum used is indicated by the results seen in table 5 in that patients with bacteremia

TABLE 5—Serum Treated Cases of Type I Pneumonia With and Without Positive Blood Cultures

	Total Cases	Fatal Cases	Case Fatality Rate per Cent
Culture positive	35	4	11.4
Culture negative	92	7	7.6

who were given serum early in the course of their disease did not show the high mortality rate usually seen in such bacteremic patients.

The results of similar early treatment of type II pneumonia, while encouraging, have not been as satisfactory as in type I cases. Of forty-eight type II patients treated with serum, twelve, or 25 per cent died. The number of cases in this group is too small to warrant definite conclusions.

⁸ Neufeld, F. and Ettinger, Tulczynska, R. Nasale Pneumokokkeninfektion und Pneumokokkenkeimträger im Tierversuch. Ztschr. f. Hyg. u. Infektionskr. 192: 492, 1931. Armstrong, R. R. Immediate Pneumococcal Typing. Brit. M. J. 1: 187 (Jan. 30) 1932. Sabin, A. B. Immediate Pneumococcus Typing Directly from Sputum by the Neufeld Reaction. J. A. M. A. 100: 1584 (May 20) 1933.

COMMENT

The foregoing results, while representing merely the present state of a study which is far from being completed, are extremely encouraging in that they indicate that within limits it is possible to reduce materially the toll of deaths from certain types of pneumonia. Were serum therapy a measure so difficult in technique as to be feasible only in the hands of a selected few, we could hardly look forward to any general public health contribution in this field. Our results, as enumerated, indicating that under the conditions outlined the case fatality may be reduced over 50 per cent, lead us to hope that through far greater utilization of Felton's concentrated antibody solution a distinct contribution may be made toward reduction of the present high pneumonia death rate. There remains, however, the problem of developing a method for wider distribution of the serum consistent with the necessity of careful conservation of so expensive a product. At a later date we hope to be able to report on this.

SUMMARY

As a part of a study of lobar pneumonia in Massachusetts carried on during the past two years by the state department of public health with the financial assistance of the Commonwealth Fund, Felton's concentrated pneumococcus antibody solution has been used by physicians collaborating in the study to treat 421 cases of pneumonia. Among these were 188 cases of type I pneumonia that were treated with serum. These yielded a case fatality rate of 10.6 per cent as contrasted with a rate of 25.9 per cent of eighty-five untreated cases of the same type.

THE SIGNIFICANCE OF THE NEWLY
CLASSIFIED TYPES OF PNEUMO-
COCCI IN DISEASE

TYPES IV TO XX INCLUSIVE

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The classification of cases of pneumonia according to their bacterial etiology has proved of considerable value to our understanding of the disease. The majority of the cases are due to the pneumococcus, and a small minority are due to other pyogenic organisms. The division of the pneumococci into types has brought out the importance of types I, II and III and has made possible the development of specific therapeutic antiserums for types I and II.

A large number of strains that had not been serologically identified were formerly classified together for convenience as type or group IV¹. They were known to occur in a great variety of pneumonias and

other pneumococcal infections² but could also be recovered from the throats of about 50 per cent of normal persons on one examination, and from the throats of all on repeated examinations³. It remained for Cooper⁴ to isolate from the miscellaneous group IV twenty-nine serologically specific strains, identified by numbers from IV to XXXII, inclusive⁵.

Our object in this paper is to survey the incidence of these miscellaneous pneumococcus types in disease seen in a general hospital. It is anticipated that a comparison between the strains of organisms found in disease

TABLE 1—Number of Patients Examined

Organism Recovered	Total Cases		Pneumonia Cases	
	Number	Per Cent	Number	Per Cent
Pneumococci types I to XX	1,094	50	910	85
Pneumococci untyped	170	12	56	9
Other organisms (Streptococcus haemolyticus, Staphylococcus aureus, Friedlander bacilli)	101	7	63	6
Total cases classified bacteriologically	1,365	100	1,064	100
No significant organism	106		52	
Total	1,561		1,146	

and those found in the mouths of healthy individuals may lead to conclusions as to the saprophytic or pathogenic characteristics of each strain. Such a comparison is made possible by this symposium. The hope has also been entertained that the separation of cases of atypical and secondary pneumonia due to different bacteria into separate groups may bring some order into an otherwise confusing group of diseases.

CLINICAL MATERIAL AND METHODS

The bacteriologic and clinical material that forms the basis for this study was collected during the course of thirty-five months. The work was directed chiefly toward the identification of the pneumococcus type in cases of lobar pneumonia in the medical services of the hospital, but specimens were obtained from many secondary pneumonias and from many pneumococcal infections other than pneumonia throughout the hospital.

All specimens of sputum were examined by means of mouse inoculation. Blood cultures were made by inoculating 5 cc of blood into a flask containing 50 cc of nutrient broth. In many instances, pour plates with 1 cc of blood were made at the bedside. Other materials for culture were streaked on the surface of blood agar plates or inoculated into mice, or both.

The number of patients examined and the varieties of organisms isolated are indicated in table 1. In a total of 1,561 hospital cases, pneumococci were isolated and their type determined in 1,094 cases. Untyped

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5. The authors are indebted to Dr. W. H. Park and Miss Georgia Cooper for diagnostic serums generously provided for this study.

pneumococci were isolated in 170 cases. Other organisms, such as *Streptococcus haemolyticus*, the Friedlander bacillus and *Staphylococcus aureus*, were the principal invaders in 101 cases, making a total of 1,364 cases which form the data to be discussed. A pneumococcus was recovered from 94.3 per cent, or 996, of the 1,067 patients with pneumonia, and a specific serologic type was identified in 91.4 per cent, or 910 of the patients with pneumococci. In 307 cases autopsies were performed, from most of which further cultures were obtained directly from the lesions and in all of which an accurate anatomic diagnosis was possible.

In the present paper only a general survey of the large amount of material that has been collected is possible. Diseases due to the new pneumococcus types that were met in significant numbers or showed any unusual features deserve careful individual analysis, such as has been reported in another section of this meeting for pneumococci of types III and VIII.⁶ At this time, strains will be pointed out that will most likely repay further study. The following subjects will be discussed: the pathogenicity of the new pneumococcus strains, the reliability of sputum cultures, the incidence of the strains in patients with or without pneumonia, the tendency of each strain to produce lobar pneumonia or bronchopneumonia, to produce primary or secondary pneumonia, to produce death, or to produce purulent complications, the incidence of the strains at different age periods, and the relative incidence of organisms other than pneumococci. The peculiarities of types I, II and III will be mentioned in passing for comparison with the peculiarities of the new types.

PATHOGENICITY OF NEW PNEUMOCOCCUS STRAINS

Because the pneumococcus strains classed together in group IV have been shown to occur in the normal mouth as well as in disease, it has been necessary to

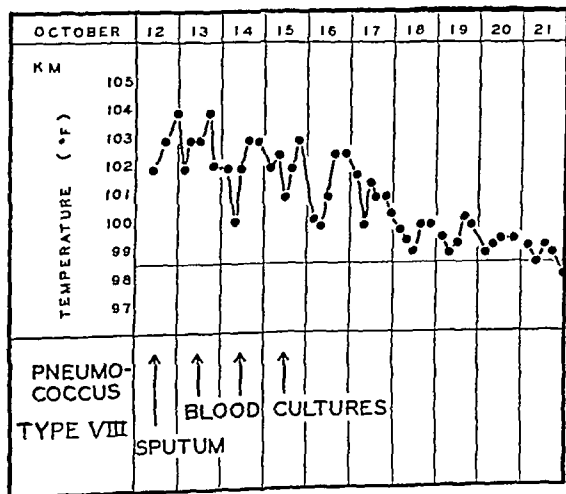


Chart 1—Lobar pneumonia due to type VIII pneumococcus ending in recovery

make clear the relationship of each strain to the disease, wherever possible, by means of multiple cultures from sputum, blood and lesions.

Two such cases may be cited. In the first (chart 1), a type VIII pneumococcus was recovered from the sputum of a patient on the second day after a typically

acute onset. A pneumococcus of the same specific strain was recovered from the blood stream on three different occasions. The clinical course was that of acute lobar pneumonia with a rather sudden termination and rapid convalescence. In the second case (chart 2), a type V pneumococcus was recovered from the sputum and the pleural fluid during life, and from the chest fluid and heart's blood at autopsy. The lesion was lobar in

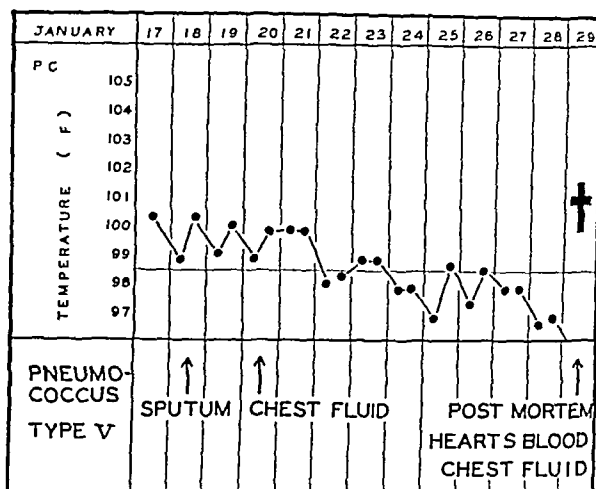


Chart 2—Lobar pneumonia and empyema due to type V pneumococcus ending in death with postmortem cultures

type on histologic examination. Such cases have been seen in the presence of all but three of the seventeen new specific types covered in this study. In ninety-nine cases of pneumonia, such pneumococcus types have been obtained from the blood stream, lung or pleura.

RELIABILITY OF SPUTUM CULTURES

Owing to the wide distribution of group IV pneumococci among normal persons, it may be questioned by some whether the finding of such an organism in the sputum is evidence of its connection with pneumonia. By a comparison of the organism found in cultures of blood or cultures from infected lesions with that found in the sputum of 220 cases, an estimate has been made of the reliability of sputum examination for diagnosis of the organism at the site of the lesion. In 202 cases, the organisms recovered from blood or lesions were the same as those recovered from the sputum. Thirty-eight of these were distributed among eleven of the seventeen newer types. In only one instance, 0.5 per cent, did a direct contradiction between the two sources appear. A type V pneumococcus was found in the lung at the postmortem examination, while a type XVIII pneumococcus and a hemolytic streptococcus had been isolated from the sputum. In a total of eleven cases, 5 per cent pneumococci were not recovered from the sputum, although a pure culture of pneumococci of a specific type was later found from another source. In all such cases, only one specimen of sputum had been examined, and in the majority it had been described as unsatisfactory. In the six remaining cases pneumococci of more than one type or other pneumonia-producing organisms were found in the sputum in cases from which cultures from blood stream or lesions were also obtained. In four of these cases, two organisms were found in the sputum and in cultures of the blood or lung. Type I was associated with Friedlander's bacilli in one case, with type III in another and with type V

⁶ Finland, Maxwell and Sutliff, W. D. Pneumococcus Types III and VIII Infection to be published.

in another, type II was associated with type IV in the fourth case. In two instances, two different pneumococci were found in the sputum and only one in the lesion. In both cases type I was found in the lung, and type I with type XVIII in the sputum of one, and type I with type XIX in the sputum of the other. The hemolytic streptococcus and the staphylococcus were frequently present in typical pneumococcal infections at autopsy. In a few instances, however, they were obviously associated with the disease. They will be discussed later.

It is safe to assume, on the basis of these comparisons, that when one of these twenty types of pneumococci is found in the sputum of a patient who has pneumonia, by the methods used for making cultures in these cases, the same organism will also be found in the lung. When more than one serologic strain of pneumococcus is found in the sputum of a pneumonia patient by the methods used here, one may find a mixed infection in the lungs, but in any case one is quite sure to

—a total of 195 per cent. Two of these types, IX and XIV, were found almost entirely in patients with pneumonia. The proportion of cases of pneumonia or empyema in the whole group of the less frequent types IV, VI, and from IX to XX was 187 of 237, or 79 per cent.

Twelve per cent of the patients had no pneumonia but had either purulent infections, such as meningitis, otitis media, mastoiditis, osteomyelitis, salpingitis, peritonitis, septic abortion, abscess due to the pneumococcus, or no apparent pneumococcal infection. The proportion of patients with purulent infections was the same in the group of the six most common types as in the group of fourteen rarer types. The proportion of patients with no pneumococcal infection was lower among the six most frequent types than among the rarer types, 5 per cent as compared with 16 per cent among the latter. Types VI, X and XVIII stand out because they occur relatively more often in patients in whom no infection was diagnosed than in patients with

TABLE 2—Incidence of Twenty *Pneumococcus* Types in Patients With and Without Pneumonia

Type	Total Number of Cases	Cases of Pneumonia or Empyema		Cases of Other Pneumococcal Infections		Cases with No Pneumonia or Purulent Pneumo- coccal Infection		
		Number	Per Cent of Cases of All Types	Per Cent of Cases with Same Type	Number	Per Cent of Cases with Same Type	Number	Per Cent of Cases with Same Type
I	317	302	31	95	8	3	7	2
II	166	157	17	95	5	3	4	2
III	190	153	16	80	18	10	19	10
V	30	48	5	96	0	0	2	4
VII	58	48	5	83	4	7	6	10
VIII	76	68	7	90	4	5	4	5
Total	837	776	81	91	39	5	42	5
IV	21	16	17	76	2	10	3	14
VI	22	14	15	64	0	0	8	36
IX	17	15	16	88	1	6	1	6
X	38	30	31	79	1	3	7	18
XI	22	14	15	64	4	18	4	18
XII	10	8	08	80	1	10	1	10
XIII	7	6	06	86	0	0	1	14
XIV	20	20	21	100	0	0	0	0
XV	6	5	05	83	0	0	1	17
XVI	2	2	02	100	0	0	0	0
XVII	9	7	07	78	0	0	2	22
XVIII	37	31	32	84	0	0	6	16
XIX	9	6	06	67	1	11	2	22
XX	17	13	14	77	2	12	2	12
Total types IV to XX	237	187	19.5	79	12	5	38	16
Total	1094	963	100	88	51	5	80	7

find one or the other of the organisms in the lesions or blood. If one of the two sputum pneumococci is type I, the examples show that type I is more likely to be found in the lung than the other organism.

INCIDENCE OF PNEUMOCOCCUS TYPES IN PATIENTS WITH AND WITHOUT PNEUMONIA

The incidence of twenty pneumococcus types is shown in table 2. Types I, II, III, V, VII and VIII were each recovered in fifty or more cases each making 5 per cent or more of the cases of pneumonia or empyema. From the standpoint of numbers, these types merit special consideration. They comprise together 78.4 per cent of patients from whom typed pneumococci were recovered and 81 per cent of the patients with pneumococcal pneumonia. They vary considerably in the frequency with which they occur in pneumonia or empyema. About 95 per cent of types I, II and V, about 90 per cent of type VIII, and about 80 per cent of types III and VII were recovered from patients who had either pneumonia or empyema. The remainder of the types numbered IX to XX and from IX to XX were each found in from 0.2 to 3.2 per cent of the cases

purulent infections. The total number of cases presenting purulent infection and the total number showing no pneumococcal infection from whom type III was obtained is by far the largest of any of the types.

LOBAR PNEUMONIA AND BRONCHOPNEUMONIA

It is of interest to note the associations of these pneumococci as etiologic factors in the classes of pneumonia that are generally recognized, namely, lobar pneumonia and bronchopneumonia. Such an attempt presents difficulties due chiefly to the fact that clinicians usually consider that sharp differentiation of the two processes is next to impossible. A division on the basis of post-mortem examinations is relatively simple and this was used whenever possible. In the absence of postmortems, reliance was placed on roentgen and physical observations. The proportions of lobar pneumonia and bronchopneumonia diagnosed clinically agreed remarkably well with those determined at autopsy.

Chart 3 shows the number and percentage of lobar pneumonias and the number and percentage of bronchopneumonias that were found in patients from whom the six most frequent pneumococcus types were obtained,

and the number and average percentage of the remaining fourteen less frequent types. In chart 4, the distribution among the cases examined post mortem is presented. The generally higher percentage of bronchopneumonia among those coming to autopsy is probably the result of a higher death rate among the patients with bronchopneumonia. Type IX, in which fourteen cases among fifteen were found to be lobar pneumonia, is the only type other than types I and II that is asso-

cent, other organisms, 41 cases, 19 per cent. Of the typed pneumococci, the first ten types in order of frequency are III, VIII, XVIII, X, V, VII, XX, II, XI and XIV, making together 81.1 per cent of the whole.

The separation of the cases into lobar pneumonia and bronchopneumonia has brought out the progressively more frequent occurrence of bronchopneumonia in the six most frequent types according to their numerical order, and the relatively high incidence of bronchopneumonia in the average of the remaining fourteen types. Type IX is an exception to this, being found in lobar pneumonia in more than 90 per cent of the cases. The relative frequency of the pneumococcus types and other organisms differs markedly in lobar pneumonia and bronchopneumonia.

PRIMARY AND SECONDARY PNEUMONIA

In an etiologic classification of pneumonia, the conception of primary and secondary pneumonia is of

TABLE 3.—Death Rates of Lobar Pneumonia and Bronchopneumonia Due to Pneumococci of Types I to XX, Inclusive

Type	Lobar Pneumonia Cases			Bronchopneumonia Cases			Total Pneumonia Cases		
	Total Number	Died		Total Number	Died		Total Number	Died	
		Number	Per Cent		Number	Per Cent		Number	Per Cent
I	98	80	29.6	5	3	60	271	87	30
II	142	65	39.0	6	5	83	143	60	40.5
III	121	79	65.3	29	15	51.8	150	94	62.6
V	38	14	36.8	9	8	89	47	22	46.8
VII	37	11	29.8	8	7	87.5	45	18	40.0
VIII	42	10	23.8	21	14	67.0	63	24	38.0
IV	14	5	35.7	2	2	100.0	16	7	43.8
VI	9	5	55.5	3	1	33.3	12	6	50
IX	14	3	21.4	1	0	0	15	3	20
X	19	7	36.8	10	5	50	29	12	41.4
XI	8	1	12.5	6	3	50	14	4	28.6
XII	6	2	33.3	2	1	50	8	3	37.5
XIII	4	2	50.0	2	1	50	6	3	50
XIV	14	1	7.1	6	4	67	20	5	25
XV	3	1	33.3	2	1	50	5	2	40
XVI	1	0	0	1	1	100	2	1	50
XVII	1	0	0	6	4	67	7	4	57.1
XVIII	19	8	42.1	12	9	75	31	17	55
XIX	4	1	25.0	2	0	0	6	1	16.7
XX	6	1	17.0	7	4	57.2	13	5	38.5
IV, VI and IX to XX inclusive	122	37	30.0	62	36	58.0	184	73	39.6
Total I to XX	770	286	37.1	140	88	62.8	910	375	41.2

Chart 3.—Percentage of lobar pneumonia and bronchopneumonia in cases due to pneumococci of types I, II, III, V, VII, VIII and the sum of the remaining fourteen types. Solid bar shows percentage of lobar pneumonia, cross hatched bar shows percentage of bronchopneumonia.

ciated with lobar pneumonia in more than 90 per cent of the cases. The other pneumococcus strains are associated with lobar pneumonia in the clinic (chart 3) in from 66 to 82 per cent of the cases, and in the necropsy room (chart 4) in from 25 to 76 per cent of the cases.

The relative incidence of all the organisms considered in this survey in the 839 cases of lobar pneumonia is as follows: typed pneumococci, 770 cases, 92 per cent, untyped pneumococci, 52 cases, 5 per cent, other organ-

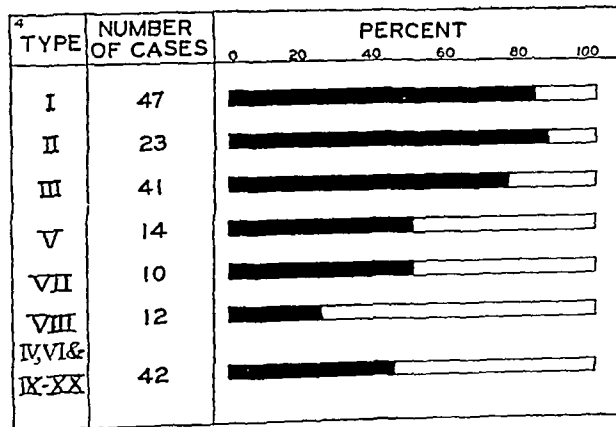


Chart 4.—Percentage of lobar pneumonia and bronchopneumonia in cases examined postmortem due to pneumococci of types I, II, III, V, VII, VIII separately and due to the sum of the remaining fourteen types. Black bar shows percentage of lobar pneumonia, white bar shows percentage of bronchopneumonia.

isms, 17 cases, 2 per cent. Of the typed pneumococci the first six types in order of frequency are I, II, III, VIII, V and VII, making altogether 84.1 per cent of the typed lobar pneumonia cases. The same organisms were found in 215 cases of bronchopneumonia in the following proportions: typed pneumococci, 140 cases, 65.1 per cent, untyped pneumococci, 34 cases, 16 per

cent, other organisms, 41 cases, 19 per cent. Of the typed pneumococci, the first ten types in order of frequency are III, VIII, XVIII, X, V, VII, XX, II, XI and XIV, making together 81.1 per cent of the whole. The separation of the cases into lobar pneumonia and bronchopneumonia has brought out the progressively more frequent occurrence of bronchopneumonia in the six most frequent types according to their numerical order, and the relatively high incidence of bronchopneumonia in the average of the remaining fourteen types. Type IX is an exception to this, being found in lobar pneumonia in more than 90 per cent of the cases. The relative frequency of the pneumococcus types and other organisms differs markedly in lobar pneumonia and bronchopneumonia.

obvious importance. There are certain situations in which patients already ill and in the hospital may develop either lobar pneumonia or bronchopneumonia. Since there is probably no difference in the exposure of such patients to contact with pneumococci and the exposure of other patients in the same hospital, it seems probable that the disease or procedures which they undergo either increase the ease of penetration of the organism to the lung or change the conditions in the lungs or body in such a way that the usual amount of organisms set up an infection more readily than usual. The types of primary illness that were considered are as follows: infectious diseases, surgical operations and obstetric procedures, and degenerative diseases. Chart 5 illustrates the proportions of lobar pneumonia and bronchopneumonia, which were primary and secondary. Lobar pneumonia due to the six most common pneumococcal types was secondary to the diseases just mentioned in a very small proportion of the cases, from 5 to 7 per cent of the total, with the exception of lobar pneumonia due to type III pneumococcus, in which 17 per cent of the cases were secondary. The average for the remaining fourteen types is 9.1 per cent. Bronchopneu-

monia, on the other hand, was secondary in the great majority of cases. Because the numbers in each type were comparatively small and the percentage incidence of secondary pneumonia in the individual types varied relatively little, only the average is shown in chart 5. Forty-seven cases were primary, and ninety-four cases, or 66.7 per cent, were secondary. No particular association between any individual primary disease and any pneumococcus type was noted.

TABLE 4—*Purulent Pneumococcal Complications of Pneumonia Developing in the Hospital*

Type	Empyema		Other Complications	Total Complications	
	Number	Per Cent of Pneumonia Cases	Number	Number	Per Cent of Pneumonia Cases
I	32	12	13	45	17
II	4	3	6	10	7
III	7	5	4	11	7
V	7	14	6	13	28
VII	2	4	3	5	11
VIII	1	2	2	3	5
IV	2	5	1	3	10
VI	1	3	0	1	8
IX	1	7	0	1	7
X	1	4	1	2	7
XI	0	0	1	1	7
XII	1	13	0	1	13
XIII	1	17	0	1	17
XIV	3	15	0	3	15
XV	0	0	1	1	—
XVI	0	0	0	0	0
XVII	0	0	0	0	0
XVIII	9	10	1	10	13
XIX	1	17	0	1	—
XX	0	0	0	0	0
Total IV, VI and IX to XX	14	8	6	20	11

DEATH RATES

From the point of view of the possible usefulness of the determination of the serologic type of the pneumococcus, no feature is more important than its prognostic value, which may be determined from the death rate in disease caused by the individual organism. The number of patients and the percentage of deaths are given in table 3 for each pneumococcus type in lobar pneumonia and bronchopneumonia separately and together. The mortality of type I and II lobar pneu-

71 to 55.5 per cent, types IX, XI and XIV apparently being less virulent, and types VI and XVIII more virulent than the average. For bronchopneumonia, the death rates of the different types are still more similar and uniformly high, averaging 63.2 per cent. It should be noted that both lobar pneumonia and bronchopneumonia caused by the organisms formerly classed as group IV are as serious as the pneumonias due to the more frequent types.

PURULENT COMPLICATIONS

The purulent complications occurring in pneumonia, as shown in table 4, were well distributed through the list of pneumococcus types, the incidence varying from none in some of the rarest types to as high as 28 per cent in type V. The latter type has a higher incidence of purulent complications, both empyema and others, than type I. Except for types in which the numbers

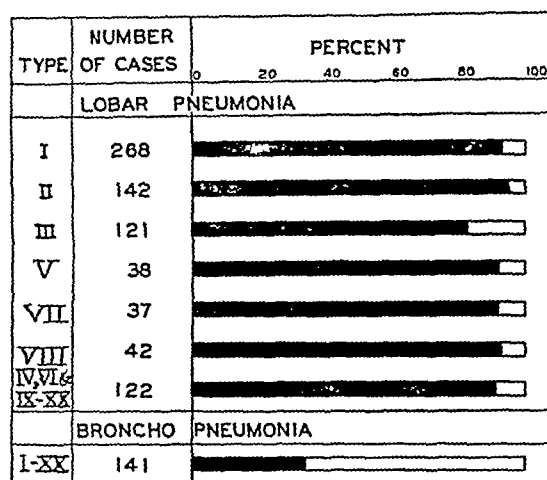


Chart 5—Percentage of primary and secondary cases among the lobar pneumonia cases and the bronchopneumonia cases. Black bar shows percentage of primary pneumonia cases; white bar shows percentage of secondary pneumonia cases.

are not significant, type I has the second highest incidence and is responsible for about 50 per cent of empyemas and other purulent complications.

TABLE 5—*Cases of Pneumonia from Which the Hemolytic Streptococcus, Staphylococcus Aureus and Friedlander Bacillus Were Recovered*

Organism	Pneumonia Cases		More Than One Organism Isolated						One Organism Isolated		
	Number	Per Cent of Total Pneumonia Cases	Number of Cases	Per Cent of Cases	Pneumococci Present			Number of Cases	Lobar Pneumonia Cases	Broncho pneumonia Cases	
					Number of Cases	Lobar Cases	Broncho pneumonia Cases				
											Number
Hemolytic streptococcus	77	7.2	20	26	20	14	6	47	10	37	
Staphylococcus aureus	32	3.0	2	6	19	12	7	4	1	3	
Friedlander bacillus	16	1.5	9	56	8	7	1	7	6	1	

Hemolytic streptococcus and Staphylococcus aureus from nine cases
1 Friedlander bacillus and hemolytic streptococcus from one case

monia is modified by the inclusion of ninety-seven and forty-six specifically treated patients, respectively. Pneumonia produced by most of the different serologic varieties has similar death rates. For lobar pneumonia the average is 37.1 per cent. The variations that stand out and are based on a significant number of cases are those of type III and type VIII lobar pneumonia, the former having an unusually high death rate, the latter having a death rate lower than the average. Variations also occur among the less frequent types from

AGE DISTRIBUTION

Types I and II show a high incidence in early ages. Type III shows a high incidence in later age groups, as reported by others. The remaining pneumococcus types—type VII, type VIII and the sum of the other fourteen—present rather similar age curves, most of the cases occurring between the ages of 20 and 59 years.

7 Cecil R. L. Baldwin, H. S. and Larsen, N. P. Lobar Pneumonia. A Clinical and Bacteriologic Study of Two Thousand Types of Cases. Arch. Int. Med. 10: 23280 (Sep.) 1927.

INCIDENCE OF ORGANISMS OTHER THAN
PNEUMOCOCCI

In a relatively small proportion of the patients with pneumonia, organisms other than pneumococci were found in cultures from the blood or lesion. The incidence of each of these organisms, hemolytic streptococci, staphylococci and Friedlander bacilli, is given in table 5. The outstanding frequency of their association with pneumococci and with one another is noted (from 39 to 88 per cent of the cases). It seems probable that in many instances these organisms are secondary or accidental invaders in their relationship to pneumonia. This point of view is supported in the case of the hemolytic streptococcus and the staphylococcus by the observation that in the cases in which the pneumococcus and one of these organisms are associated the lesion is usually that of lobar pneumonia rather than of bronchopneumonia, whereas the lesion in the lungs when either hemolytic streptococci or staphylococci are found alone is generally patchy.

SUMMARY AND COMMENT

This general survey of the incidence of twenty serologically specific strains of pneumococci and of hemolytic streptococci, staphylococci and Friedlander bacilli in the pneumonia cases in a general hospital in an inter-epidemic period shows that each one of these organisms may cause the disease. The rare type-specific pneumococci numbered from IV to XX are consistently present in the sputum and lesions in certain cases of lobar pneumonia and bronchopneumonia. The presence of such pneumococcus strains in the sputum of patients with pneumonia is a reliable indication of their presence in the lung.

Exact etiologic diagnoses of pneumococcic pneumonia were made by the use of seventeen of the new typing serums, in a group of cases in which this has heretofore been impossible, amounting to 30 per cent of the total number of lobar pneumonia cases, and in 65.1 per cent of the relatively little understood and important group of bronchopneumonia and secondary pneumonia.

The order of frequency of the six most frequent pneumococcus types in pneumococcic lobar pneumonia is as follows: I, II, III, VIII, V and VII, making together 84.1 per cent of the cases, and the order of frequency of the ten most frequent types in pneumococcic bronchopneumonia is: III, VIII, XVIII, X, V, VII, XX, II, XI and XIV, making altogether 81.1 per cent of the cases. The six types most frequent in lobar pneumonia are also those most frequent in the whole series and have been given more attention than the others.

Certain individual characteristics of the pneumonias caused by the new pneumococcus types from IV to XX are brought out and compared with the better known types I, II and III. The three most frequent of the newer types are V, VII and VIII. Type V makes up 5 per cent of the total of pneumococcic pneumonias or empyemas and causes either pneumonia or empyema in 96 per cent of the cases in which it is found and leads to purulent complications in 28 per cent of the pneumonia cases. Type V is associated with lobar pneumonia rather than bronchopneumonia in only 81 per cent of the cases, in which respect it resembles most of the newer types. Its age distribution is quite irregular and without the usual preponderance in middle life. Type VII is associated with pneumonia or empyema in only 80 per cent of the cases but leads to

purulent complications in 11 per cent, a rather high proportion of these pneumonia cases. Type VIII is associated with pneumonia or empyema in 90 per cent of the cases in which it is isolated and has a low mortality in lobar pneumonia, 23.8 per cent, but, owing to an average bronchopneumonia mortality of 67 per cent, has a total mortality near the average.

The experience afforded by the bacteriologic classification of this series of pneumonia cases has indicated that the pneumonias due to different serologic strains of pneumococci and due to other organisms may be regarded as separate entities. By identifying such organisms in every case, the clinician may make accurate etiologic diagnoses and prognoses, the epidemiologist may unravel the factors affecting the organism and the patient leading to the development of atypical and secondary pneumonia, and the physician may apply the large amount of information about pneumococcus type specificity to the cure and protection from pneumococcal infections.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DR. SMILLIE, DR. HEFFRON AND
ANDERSON AND DR. SUTLIFF AND FINLAND

DR. H. A. REIMANN, Minneapolis. Drs. Sutliff and Finland have pointed out the desirability of regarding all cases of pneumonia from an etiologic point of view. This procedure is now inevitable. The terms lobar pneumonia and bronchopneumonia are becoming obsolete and will be superseded by terms indicating the causative organism. It is already possible to diagnose and classify by clinical and laboratory methods several distinct entities, for example types I, II and III pneumococcic pneumonia, streptococcic pneumonia and staphylococcic pneumonia. Other forms, although at present less well defined, are being actively investigated and no doubt will soon be clearly differentiated from the confused group heretofore regarded as bronchopneumonia. It is only by methods of etiologic classification that further progress can be made in the development of specific prophylaxis or therapy. The studies of Drs. Sutliff and Finland are of especial importance in regard to the pneumococcus types recently classified. It is no doubt bewildering at first to many, even to those actively interested in pneumonia, to learn that there are now thirty-two types, and number thirty-three has just been added by Silberstein. The question at once arises as to the practical application of the knowledge of these new types. At present obviously, it is technically impossible to prepare and have on hand thirty-three types of specific antiserum. The great value of the classification of pneumococcus types, as Dr. Sutliff stated, lies in furthering accurate diagnoses and prognoses and in regard to epidemiology. Gundel in Germany has shown that different types predominate in different localities which can be explained on the basis of contact infection. These studies are valuable additions to the knowledge gained in the various army camps during the influenza pandemic of 1918, namely, that the predominating form of pneumonia depends on the predominating organisms in a given locality. Although the recognition of the multiplicity of types of pneumococci would seem at first to be confusing and to be of purely academic interest, it will as a matter of fact, prove to be a simplification. It will become possible to recognize separate entities and to develop specific prophylaxis and therapy.

DR. WILLIAM H. PARK, New York. Those who have been in this pneumococcus work for some time realize the difficulties which Dr. Anderson and Dr. Heffron undertook when they tried to utilize in the smaller communities the knowledge obtained in our large hospitals. It meant that they must have laboratories with competent technicians, that they must have serum for at least some of the types that they must have clinicians available to meet the physicians in these smaller towns to aid them in their use of the serum. The work of Dr. Smillie and Drs. Sutliff and Finland is much in the line of what we have been doing in New York except that it is

even more extensive. One point I want to bring out which they didn't touch on is that in little children the comparative frequency of types is quite different from that in adults. This is true of both bronchopneumonia and lobar pneumonia. The percentage of bronchopneumonia under 2 years is much higher than that above 2 years. The streptococci are more frequently encountered in bronchopneumonia. While the type I pneumococcus is fairly abundant, type II is almost absent in children and type III is quite infrequent. There are five other types among the thirty or more separated equally important with type I, so that it is a much more complicated matter to treat children than adults, in whom types I and II cover about half the cases. Fortunately, type I serum is probably the best of the therapeutic serums, and type II is very useful. I question greatly the therapeutic value of type III serum. The types of pneumococci are only slightly allied, and for therapeutic purposes one must use a serum produced in a horse through the stimulus of the type of pneumococci producing the case of pneumonia to be treated. Unfortunately, the horse will make a good therapeutic serum for only two or, at most, three types of pneumococci, therefore it seems almost impossible at present to think of having serums for more than a few of the most frequent types because of the expense of obtaining these serums. At present types I and II are being made commercially and satisfactorily. As to the thirty types of pneumococci, there are really probably fifty or sixty types, but Miss Cooper has stopped tabulating the additional types. The point is that there are only seven or eight prevalent types and about twenty more slightly prevalent types, and the rest are so scattering that they are practically of no interest. I want to say that the thanks which have been given are not due me but to Miss Cooper. As to the use of pneumococcus vaccine, I think there is hope that physicians may be able to use a vaccine with advantage, because advances have recently been made in the preparation of vaccines and in methods of administration.

DR MAXWELL FINLAND, Boston. The clinician faced by a group of thirty-two different strains of pneumococci is doubtless appalled. The laboratory technician and the careful epidemiologist likewise feel overwhelmed at the idea of maintaining such a large set of serums and of agglutinating each pneumococcus with them all. In addition, the latter workers must also become acquainted with the special idiosyncrasies of each of these specific strains. This symposium and work along similar lines in Boston, New York and elsewhere in this country and abroad are doing much to simplify the current conception of the importance of the various types of pneumococci. From these studies it appears that only three or at most five or six of the newly classified types occur with any great frequency in disease. If these studies have done nothing more, they have shown the direction in which effort must be concentrated. I should like to add one word with respect to the etiologic relationship of the newly classified pneumococci to disease. During the past year Dr Alexander W. Winkler and I have studied the specific antibody response of patients with pneumonia associated with these types. Briefly, the immunity resulting from lobar pneumonia and, in many instances, from bronchopneumonia due to these types was found to be type specific in character. Agglutinins for the homologous type of pneumococcus were demonstrated about as frequently as in similar type I and II cases and agglutinins for heterologous types were very rare. We believe that these observations tend further to support the etiologic relationship of the newly classified types to pneumonia.

DR M. L. BARNES, Iowa City. I should like to ask Dr Smillie in regard to studies made on the normal cases as controls: how often does he find pure type cultures with these characteristics? How often did he find mixed types? He reported the homologous organism I believe. How often did he find pure cases of homologous organism may I ask?

DR WILSON G. SMILLIE, Boston. Individuals may have two or even three types of pneumococci in the nasopharynx but this is not a common occurrence. Usually an individual either a contact with a case of pneumonia or a person of the general population has only one strain in the nasopharynx. Dr Park mentioned the fact that there may be certain variations in different parts of the country or different parts of the world in relation to the incidence of these various types of pneumococci. This was shown interestingly in studies of isolated com-

munities in the South, in Alabama in Labrador in Spitzbergen and in the West Indies. These different communities have an entirely different picture so far as their specific types of pneumococci are concerned. Type III, however, is the most protean. It is feared most. It has the highest death rate of any of the types of pneumococci, and yet it is by far the most common type of pneumococcus one finds in general communities. One person out of every four in this assembly has the type III pneumococcus in the nasopharynx. Curious as that may be, it nevertheless is a fact. The death rate, when it produces pneumonia, is very high. It is a fatal disease of elderly people. The young people who have type III pneumonia are not likely to succumb.

RELIEF OF PELVIC PAIN BY SYMPATHETIC NEURECTOMY

REPORT OF SEVEN CASES IN WHICH THE SUPERIOR
HYPOGASTRIC PLEXUS (PRESACRAL NERVE)
WAS RESECTED

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In this contribution I might well begin by paraphrasing the remarks of Dr Edward Archibald, who, before the seventeenth annual meeting of the National Tuberculosis Association in 1921, called attention to the backwardness of American surgeons in accepting thoracoplasty as an aid to the cure of pulmonary tuberculosis. He said "America is not generally supposed to be arriere, in matters surgical, nor is she, yet it is somewhat strange that in this country the treatment of certain types of pulmonary tuberculosis should have remained so far behind the standard set for some years back, in Europe." The substitution of "pelvic pain" for "pulmonary tuberculosis" expresses what I mean.

As far back as 1899¹ there were reports from European authors relative to the relief of various types of pelvic pain by means of sympathetic nerve surgery. A more recent contribution by Cotte² in 1925, however, is the basis on which the present operation is performed.

It is true that in the beginning many of the methods of approach and the structures attacked made the operation at times a formidable one. Experience and a better knowledge of the anatomy of the sympathetic nerve supply of the pelvic viscera have, however, made the operation as now practiced one which in competent hands should carry as low an operative mortality rate as any other elective pelvic operation. The same structures are attacked as in operations for the relief of motor dysfunctions of the lower intestinal tract, such as Hirschsprung's disease and the chronic rectal type of obstipation.³ I have been unable to find a mortality following this operation reported in the American literature. Fontaine and Herrmann⁴ report one death two days following operation. The autopsy disclosed only an edema of the brain, which would very likely in this case have followed any other pelvic operation.

From the Gynecological Department of St. Joseph Hospital.
Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

¹ Jaboulay, M. Le traitement de la neuralgie pelvienne par la paralysie du sympathique sacre. *Lyon med.* 90: 102, 1899.

² Cotte, G. La sympathectomie hypogastrique a-t-elle sa place dans la therapeutique gynecologique? *Presse med.* 30: 98 (Jan. 24), 1925.

³ Rankin, F. W. and Iearnmonth, J. R. Section of Sympathetic Nerves of the Distal Part of the Colon and Rectum in the Treatment of Hirschsprung's Disease and Certain Types of Constipation. *Ann. Surg.* 92: 10 (Oct.) 1930. Wetherell, F. S. Effects of Sympathetic Nerve Surgery in Certain Intestinal Conditions. *ibid.* 97: 483 (April) 1933.

⁴ Fontaine, Rene and Herrmann, L. G. Clinical and Experimental Results in the Surgery of the Pelvic Sympathetic Nerves in Gynecology. *Surg., Gynec. & Obst.* 54: 135 (Feb.) 1932.

The scope of this paper is not intended to cover the detailed anatomy and physiology relative to that portion of the sympathetic nervous system discussed. Only so much of these subjects as will give the reader a general idea is, therefore, included here.

GROSS ANATOMY OF THE SUPERIOR HYPOGASTRIC PLEXUS AND ITS CONNECTIONS

Coursing downward on either side of the anterior wall of the abdominal aorta may be seen two sympathetic nerves. They begin above at the origin of the superior mesenteric artery and are called intermesenteric nerves. At the level of the inferior mesenteric artery the left nerve gives off a plexus of nerves which follows the inferior mesenteric artery and its branches. Below the inferior mesenteric artery the two nerves unite to form the beginning of the superior hypogastric plexus (presacral nerve). This is rarely a single nerve, as a rule forming a true plexus. This plexus lies anterior to the bifurcation of the aorta and is separated from it by a thin layer of fascia. The main portion of this plexus usually lies in close relation to the left common iliac artery. At the upper level of the promontory of the sacrum the superior hypogastric plexus divides into two distinct nerves, called the inferior hypogastric plexus. Many variations of the plexus are encountered. In the main, it is a triangular mass and receives fibers from the inferior mesenteric plexus lying within the pelvic mesocolon at its left, and also from the lower ganglions of the lumbar sympathetic chain. Elaut⁵ has given the name "interiliac trigon" to the area in which the plexus is found. This trigon is at the level of the lower third of the fourth lumbar vertebra, the last intervertebral cartilaginous disk, and the fifth lumbar vertebra (the term "presacral" being therefore a misnomer). The apex of the triangle is at the bifurcation of the aorta and its sides are formed by the two common iliac arteries, the base being a line connecting the arteries at the upper level of the promontory of the sacrum.

The inferior hypogastric nerves, 2 or 3 inches in length, course along the internal iliac arteries and give branches to them which follow the various branches of the arteries. The nerve supply of the rectum and, in the main, to the ureters, is derived from the inferior hypogastrics. After these branches are given off, a mass of nerve fibers and ganglion cells is formed which is called the hypogastric ganglion. Visceral branches to the pelvic organs are derived from the medial surface of this mass. Five superior hypogastric plexuses removed from the patients whose histories follow show a general triangular outline and numerous communicating fibers.

PHYSIOLOGY

The sympathetic nervous system, as has so well been demonstrated in the surgery of this system in relation to vasoconstrictor disease, supplies the impulse of contraction to the arteries. The work of von Gaza⁶ points to the possibility that pain sense is conveyed by sympathetic nerve fibers. Pain in the viscera is dependent on other causative factors than is the pain from the body surface. The former results when there is abnormal distention, spasm or anemia.

The connections of ganglions of the sympathetic chain with the spinal centers explains the reference of pain to the surface. This pain is usually referred to definite segmental zones corresponding to the level at which the sympathetic fibers connect with the peripheral nerve fibers. The pains of gallbladder colic and ureteral colic, so well known to physicians, are classic examples. Relief of pain in the pelvis following resection of the superior hypogastric plexus indicates that pain impulses are conveyed to the central nervous system by way of these fibers, although the exact mechanism is still in question.

TYPES OF PAIN

Every physician in active practice has at times found himself at his wit's end to find therapeutic measures, excepting opiates, that would relieve pelvic pain. Many of the afflicted individuals have often been placed in the category of "disturbing neurasthenics." Most of these patients are seen in the beginning by the family physician, and his attention, as well as that of gynecologists and abdominal surgeons, should be called to the relief afforded by resection of the superior hypogastric plexus and to the types of pain that may be relieved.

Group A. One of the severest types is the pain of metastatic involvement following carcinoma of the uterus.

Group B. While not as severe, but nevertheless of a character that causes not only distress but also a varying amount of disability, is the pain that is present following pelvic operations. This group includes those cases in which the very pain for which the operation was originally performed is still present, and those in which the pathologic lesion found at the time of operation is often very slight in extent, consisting in the main of adhesions, or sclerotic ovaries that may or may not show cystic degeneration.

Group C. The third type is the one occasioned by functional dysmenorrhea—unrelieved by any of the known therapeutic methods, not including the use of opiates, radiation or hysterectomy.

Irradiation and hysterectomy are such radical measures when applied to young women that an operation which conserves function and at the same time gives relief should readily be accepted by the medical profession as an addition to its therapeutic armamentarium, provided it is reasonably safe in its application. My experience has been limited to the three types mentioned.

Relief has also been reported in cystalgia, pruritus vulvae, vaginismus, and dyspareunia.

GROUP A

CASE 1—M. P., a housewife aged 29 married, entered the hospital, Oct. 12, 1932, because of prolonged and profuse vaginal bleeding of a year's duration. A year before her admission she noticed that she was flowing longer at each period and that there was an increasing dysmenorrhea. For the past few months she had bled from twenty to twenty-five days every month and this flow was accompanied by steady pain in the lower part of the abdomen and in the umbilical and both iliac regions. A section from the cervix showed epidermoid carcinoma. She was in severe pain constantly, yet pelvic examination showed the uterus freely movable and there was no indication of extension of the malignant condition. The growth seemed to be confined to the posterior wall of the cervix. Her temperature ranged from normal to between 100.4 and 102 F. There was great tenderness on bimanual examination and the possibility of a subacute pelvic inflammatory disease was considered. Her sedimentation time, taken on five different occasions from October 12 until November 15, ranged

⁵ Flaut, I. The Surgical Anatomy of the So Called Pre sacral Nerve. Surg. Gynec. & Obst. 55: 581 (Nov.) 1932.

⁶ von Gaza, W. Ueber paravertebrale Neurektomie an grenzstrange und paravertebrale Injektionstherapie. Ein Beitrag zur Behandlung neurotisch-dysfunktioneller Krankheitszustände bauchinnerer Organe. Klin. Wchnschr. 3: 525 (March 25) 1924.

from ten to forty minutes. Her pain became so severe that she required several doses of one-sixth grain (0.01 Gm.) of morphine every twenty-four hours, and she had a very poor appetite, eating but little.

It was decided to explore the pelvis, which was done, November 21, with the idea of removing chronically infected fallopian tubes, if found, so that radiation therapy might be begun. The tubes were found to be slightly thickened, with thin adhesions to the broad ligament, but they did not have the appearance of having been the site of any recent inflammatory reaction. They were not removed because of the feeling that it would not be well to do so in the presence of a malignant condition. Our judgment proved correct in that there was no reaction following irradiation. The hypogastric plexus was dissected free and removed. At the end of the abdominal operation, radium was inserted in the cervix. A second treatment with radium was given, December 7, and at this time the patient was still free from pain. Three days after the operation she stated that she was entirely free from her pain, and she had not required an opiate since the first day after the operation, was hungry and eating well. She was still comfortable in February, 1933.

CASE 2—G. T., a housewife, aged 30, married, admitted to the hospital, May 22, 1933, complained of terrific pain in the pelvis and inner side of the upper left thigh. She had been in the hospital on two previous occasions during the past two years for the treatment by radiation of carcinoma of the cervix. Examination on admission disclosed a grade 4 carcinoma, the uterus being fixed and with definite extension into the parametrial tissues. The pain was without a doubt due to the extensive metastatic involvement. She had been getting one-sixth grain of morphine hypodermically every three or four hours, despite which she often screamed with pain. A superior hypogastric resection was done, May 29.

The patient required one dose of morphine the first day after the operation. On the second day after the operation she began to complain of the pain in her thigh, saying that the pelvic pain was entirely relieved but the pain in the thigh was still present and as severe as before. A small dose of codeine relieved the pain in the thigh, which was only spasmodic on the tenth postoperative day.

Case 1 is an example of severe pelvic pain in an early carcinoma of the cervix. The growth was limited to the posterior wall and the explanation may be that a secondary inflammatory reaction in the uterosacral ligaments, which are very richly supplied by sympathetic nerves, accounted for the pain. It has been suggested that, since many grade 3 and grade 4 carcinomas eventually cause severe pain, it might be well to explore the pelvis and do a "prophylactic resection" of the superior hypogastric plexus. There can be no objection to resection in carcinomas of grades 1 and 2, particularly if there is pain present. Such a routine would give the operator an excellent insight into pathologic conditions existing in the pelvis in conjunction with carcinoma and might be an aid in determining the technique of future irradiation in a given case.

In case 2 the mesentery of the sigmoid was displaced to the right in the manner described by Elzut,² which made the resection difficult and precluded the possibility of doing either a periaarterial sympathectomy of the common and external iliac arteries or a ganglionectomy of the lower left lumbar ganglions. It is for that reason that this patient still has pain on the inner side of the thigh. As soon as the patient's condition permits, a left lumbar ganglionectomy will be performed.

GROUP B

CASE 3—M. K., a housewife aged 42, married, admitted to the hospital Aug. 25, 1932, complained of sharp pain in the lower part of the abdomen and pelvis and in the sacral region, the pain being practically constant. She also complained of frequency of urination (every ten to fifteen minutes). The

latter she had noticed for one year, although the present frequency had been present for only two months. There was no burning on urination. Urologic examination disclosed nothing to account for this frequency. There was no sugar in the urine. The blood sugar was 131 mg. She had had two operations for ectopic pregnancy. Pelvic examination disclosed a moderately enlarged, nodular uterus with some evidence of the presence of adhesions.

Examination of the lumbosacral spine revealed no lesions that could account for the back pain. She was operated on, August 30. The uterus, about the size of a small grapefruit, contained numerous fibroids and was removed with the left ovary. The right ovary, which appeared normal, was left in. Her postoperative course was uneventful. She was seen in the follow-up clinic at monthly intervals until December 20, and the last report from her is dated May 31, 1933. She has had no pain and has had regular bowel movements without the use of cathartics, which were taken regularly before the operation. The urinary frequency gradually lessened until Dec. 20, 1932, when there was a three and one-half to four hour frequency, but her last report states that she is again having a one-half hour frequency.

CASE 4—K. M., a housewife, aged 25, entered St. Joseph Hospital, Oct. 3, 1932. Her chief complaint was a severe, constant, aching pain in the right lower iliac region with some pain also present in the left iliac region, which, however, was not quite as severe as that on the right side. Pelvic examination disclosed a uterus about the size of a two months pregnancy, and generalized pelvic tenderness. The Aschheim-Zondek test was positive. She had one child, aged 5 years. Since the birth of this child she had two miscarriages, one three and one-half years before admission, which occurred at six and one-half months, and one two and one-half years before, which occurred at six and one-half months, six months before, she aborted at six weeks. Her last period was two months before admission. At that time she went to bed for four days because of pain and cramps. This was her last menstruation up to the time of her admission to the hospital.

She had been in another institution before her admittance to St. Joseph Hospital, having gone there because of the severity of the pelvic pain. Nothing was done about it during her stay there except to give her anodynes, which gave her very little relief. It was quite apparent that the woman was having severe pain and this pain was not typical of any definite pathologic condition. There was some tenderness over the appendix, but the pain of which she complained was all below this point.

All the usual medical means for the relief of her pain were tried for a week, but nothing short of opiates gave her any relief. It was then decided to do an exploratory operation with the idea of removing any pathologic conditions which might be found.

The appendix seemed to be somewhat congested and it was removed. The uterus was about the size of a two months pregnancy. The superior hypogastric plexus was resected. The appendix was removed as a routine, yet the pathologic report states that there was "chronic and some acute appendicitis." She left the hospital October 23, twelve days after the operation and was entirely free from the pain for the relief of which she had entered the hospital. Five months later she was still free from the pain, and there had been no effect on the pregnancy.

CASE 5—A. D., a woman aged 32, divorced, admitted to the hospital Aug. 26, 1932, complained of generalized pelvic pain. She had had three abdominal and pelvic operations for the relief of pain over a period of six years, yet she still suffered from the same pain. She had recently been discharged from another hospital with the diagnosis of neurasthenia. Pelvic examination disclosed generalized tenderness. The director of the local Veterans Bureau stated that the woman had cost them many hundreds of dollars and that they were anxious to have something done that would rid her of her pain. They doubted very much, however, because of her repeated visits to hospitals that anything could be done for her and were rather unwilling to shoulder any more financial burden in her case. On the off chance, however, that a superior hypogastric

resection might relieve her pain, this operation was performed, August 30, by my associate, Dr. Floyd R. Parker. The only pathologic conditions discoverable were a few adhesions and a sclerotic, cystic ovary. The ovary was removed. One ovary remained. In December, she reported complete relief.

CASE 6—A. L., a housewife, aged 23, married, admitted to the hospital, Sept. 1, 1932, complained of pain in the lower right side of the abdomen. This pain had been very severe for one week before her admission. She had had some pain in the right groin for six months, the pain radiating upward toward the kidney and downward into the right thigh. She had no urinary symptoms at any time. There was no pain on the left side. Urologic examination disclosed no pathologic condition. In November, 1929, her right tube, ovary and appendix had been removed. On pelvic examination, there was tenderness in the right adnexal region. There was some tenderness posterior to the uterus. The cervix was hard and somewhat hypertrophied, and both lips were somewhat eroded. The tenderness on abdominal palpation was mainly below the costovertebral angle and around to the right iliac region. This pain had been reproduced by right ureteral catheterization.

She was operated on, Sept. 17, 1932. Three light adhesions of the omentum to the anterior abdominal wall were noted. The sigmoid and the terminal ileum were lightly adherent to the posterior surfaces of the uterus and broad ligaments. The right tube and appendix were absent. The left tube and ovary were adherent to each other and to the sigmoid colon. When separation of the left tubo-ovarian mass was begun a chocolate colored fluid appeared. What looked like a small mass of endometrial material was squeezed from the ovary, leaving an area about 15 cm. in diameter, the base of which contained a yellow area, probably corpus luteum. This diagnosis was confirmed by the pathologic examination. The adhesions were freed. The left tube was removed with its interstitial portion and the ovary was suspended to the left cornu of the uterus. A superior hypogastric resection was done. The follow-up notes on this patient show that she has been entirely free from pain since her operation. During April and May of 1933 she flowed excessively at the time of her periods and passed many clots. She went to the hospital, May 26, for a diagnostic curettage. The curettings showed chronic hyperplastic endometritis. Endocrine therapy is undoubtedly indicated.

There is no gross pathologic lesion to account for the pain in case 3. If a fibroid uterus or light adhesions per se were the causative factors, all women with such conditions present in the pelvis would suffer pain. This is known not to be so. Another factor not yet disclosed may be at work. It may be either a pelvic sympathetic supply, which is peculiarly susceptible to insult by extrinsic causes, or some lesion in the ganglions or nerves themselves.

In case 4 it cannot be conceived that the pain of which the woman complained was entirely due to the pathologic condition of the appendix. Resection of the plexus has no notable effect on pregnancy or parturition, according to reliable reports.

Patient 5 was relieved of her pain, yet nothing was done except the nerve resection and the removal of one ovary. She was seen at monthly intervals for four months and had not had a return of the distress.

In case 6 the pathologic condition that was present was on the left side of the pelvis, yet the pain of which the patient complained was on the right side and was undoubtedly of ureteral origin. As has been stated before, the main sympathetic supply of the ureters is in relation to the superior hypogastric plexus, and it may be presumed that for this reason she is now free from pain. The fact that the patient has begun to flow excessively does not coincide with the observations of Fontaine and Herrmann.⁴ The pathologic report of hypertrophic endometritis seems to indicate that she is in need of endocrine therapy.

GROUP C

CASE 7—P. L., a woman, aged 26, a nurse, married, complained chiefly of severe dysmenorrhea of a disabling character. She had had dysmenorrhea ever since she began to menstruate at the age of 14. Her periods had always been scanty, and for the past two years the dysmenorrhea had been of such a character that she was obliged to spend most of her time in bed during each period. These periods of disability were being so prolonged that she was unable to work at her profession, in fact, during and following her last menstruation she had been in bed nearly three weeks. She was very obese, being about 80 pounds (36 Kg.) over average weight. She had had all the usual medical treatment for the relief of dysmenorrhea and had come to the point at which opiates had to be administered by her physician during her disability period.

She was operated on, Oct. 2, 1932. The uterus was normal in size but both ovaries were markedly sclerotic. The left one was incised and was found to be of the consistency and appearance of a piece of very hard, white cheese. The left ovary was removed. The greater part of the right ovary was removed, a piece about 1 inch long, 1/2 inch wide, and 1/4 inch thick being left. The superior hypogastric plexus was then dissected out and excised. Five days after the operation the patient noticed moisture in the bed and found that she was menstruating, having had no premonitory symptoms. One month later she again began to menstruate without warning. She noted that the amount of flow was as much during these two periods as she had ordinarily had in a year. Recent conversation with the patient discloses the fact that she is menstruating regularly every month and that she is entirely free from dysmenorrhea.

Case 7 is a typical example of a severe dysmenorrhea, showing that one may conserve ovarian function and yet have definite relief of pain. Attention is called to the economic feature in this case and in case 6.

OPERATION

Briefly, operation is done as follows. A midline incision is made extending from the symphysis pubis to or, better still, slightly above and to the left of the umbilicus. (An extreme Trendelenburg position aids greatly.) The pelvis is explored and any gross pathologic conditions are treated in the usual manner. The sigmoid and the small intestine are packed off. The bifurcation of the aorta is palpated, and the parietal peritoneum is picked up just below it and nicked with scissors. The area described under "anatomy" is laid bare. Then, with the aid of blunt right angled hooks, the fibers of the plexus are picked up and bluntly dissected with a small moist cotton ball on forceps.

This dissection is carried upward to the beginning of the plexus and downward to the beginning of the inferior hypogastric nerves. The bundle of nerve fibers is resected at these points. All communicating fibers are cut during the resection and the posterior parietal peritoneum is closed over the area.

In a certain percentage of cases, difficulty may be encountered because of the implantation of the meso-sigmoid to the right, but a small nick in the right leaf, which is then enlarged by careful tearing rather than cutting, results in a good exposure of the interiliac trigon.

SUMMARY

1 The relief of pelvic pain and of functional dysmenorrhea followed the operation in seven cases of resection of the superior hypogastric plexus (presacral nerve), as practiced for several years by various European surgeons.

2 The results, as reported in the literature and from personal experience, indicate that there is a definite value in the procedure, in certain cases the procedure allows the conservation of female reproductive organs which have heretofore been sacrificed.

3 Complete examination of the patient from all standpoints and all known methods of relief short of the use of opiates, radiation and hysterectomy should be carried out before resort is made to sympathetic neurectomy

CONCLUSION

The experience of American surgeons who have performed the operation of superior hypogastric neurectomy for other than painful conditions of the pelvis bespeaks its safety. Reports emanating from European clinics, along with personal experience, forces me to concur in the statement of Fontaine and Herrmann* that it is "a safe, simple, and efficacious way of interrupting these pathways in the treatment of the functional type of dysmenorrhea as well as a method of relieving other forms of severe pelvic pain."

Medical Arts Building

ABSTRACT OF DISCUSSION

DR J P GREENHILL, Chicago. All gynecologists come in contact with women who suffer excruciating pain as the result of grade 3 and grade 4 carcinoma. Up to the present time most of us have been giving these women large doses of opium derivatives. There are, however, two surgical procedures which can give these women immediate and long-lasting relief. One known as chordotomy, requires a knowledge of neurologic surgery. The operation consists in the removal of the laminae of the second, third, fourth and fifth thoracic spines and an incision in the anterolateral column, which if it is not exactly placed may not only fail to relieve the pain but may result in permanent paralysis of the legs. The second operation, sympathectomy, is a very simple operation and can be performed by any one trained in abdominal surgery. The indication for this operation is severe pain in the lower abdomen in the back, and down the legs. Not all patients with inoperable carcinoma will be relieved of their pain by this procedure. If a woman has distant metastases, if she has pain due to involved glands pressing on the obturator nerve, or if there is pressure on the sacral nerves this operation will not give the desired relief. Unfortunately, there is no way of detecting these three contraindications. However, since these three sources of pain are not common most women who suffer from inoperable carcinoma of the cervix should be subjected to this operation which entails practically no risk. Two months ago Dr Herbert Schmitz and I reported a series of thirteen cases before the Chicago Gynecologic Society. All these patients had inoperable carcinoma of the cervix. I have performed ten of these sympathectomies for inoperable carcinoma of the cervix, two for bladder carcinoma and one for dysmenorrhea. I might say that in all thirteen cases the results were spectacular, all the patients had complete and instant relief from their pain. One word of explanation is necessary for the patient with dysmenorrhea. In spite of the glowing reports which appeared in the French literature I have always felt that a laparotomy for dysmenorrhea is heroic treatment. However, one patient absolutely insisted on the operation when told about it. She had dysmenorrhea for fifteen years and spent from three to eight days in bed every single month. I performed the operation and she had a menstrual period in the hospital without any pain for the first time in fifteen years. Of course part of this result may have been psychic. Furthermore the patient has had only one period since the operation, so I cannot tell how permanent the results will be.

DR CHARLES H FRAZIER, Philadelphia. I am somewhat of an intruder in this section but I venture to speak because I am interested in the relief of intractable pain from carcinoma of the pelvis. In my clinic since 1914 we have performed the so-called Spiller operation, i.e. section of the anterolateral columns of the cord for the relief of pain and more recently we have tried the effect of the operation on the sympathetic system. Dr Wetherell gave a rather pathetic picture of chordotomy. The exposure doesn't have to be as extensive as he mimed and by the technic now practiced, complications

may be avoided. How is one going to differentiate between cases in which the presacral nerve should be resected and those in which a chordotomy should be done? From an experience covering almost twenty years I can assure the patient that chordotomy will give relief. No one will dispute that a laminectomy as preliminary to a chordotomy is a little more formidable operation than a simple laparotomy as preliminary to a resection of the presacral nerve. Can one determine before hand which of the two radically different operations is indicated? About two weeks ago I operated on a patient of Dr Floyd Keene's whose pain seemed to be confined altogether to the pelvic viscera. Since the afferent or sensory supply from the pelvic viscera passes through the presacral sympathetic nerve, the resection of this nerve in this particular case seemed clearly indicated. But when this terrific pain is referred, as it often is, to the back or the extremities, is it worthwhile even to consider a resection of the presacral nerve? All these patients have been suffering intolerable pain, most of them are more or less addicted to morphine. But I think it will be agreed that morphine is not the answer to pain in these cases. To patients who at the most may have only six months' expectation of life, one should be able in proposing any operation to guarantee relief from pain. I should like to know how Dr Wetherell differentiates between the groups which should be operated on by his method and the groups which should be operated on by chordotomy. I should like to ask him whether, as after chordotomy, the results of sympathectomy are permanent, and one more question from his own experience, has he found that a periarterial sympathectomy of the common and internal iliac veins, as proposed by Leriche, gives relief of pains referred to the back and the extremities? In the large majority of the patients on whom I have happened to operate, those are the pains of which the patient complains most.

DR FREDERICK S WETHERELL, Syracuse, N Y. This is the "creeping age" in the matter of sympathectomy for relief of pain. As Dr Frazier has intimated, chordotomy has a definite place as a procedure for the relief of pain. The important point about chordotomy is that it must be done by an expert neurologic surgeon and, for that reason, many patients will be without relief unless they are transferred to centers where such expert service is available. Any competent surgeon, with special study, can perfect himself in sympathetic nerve surgery, and thus men throughout the country will be available for such work, provided, of course, it is found as time goes on that relief can be given by means of sympathectomy. Dr Frazier asks as to the type of pain that may be relieved by sympathectomy and the type which may require chordotomy. Experience has shown that the cases in which the Head zones map out an area which indicates that the pelvic viscera alone are affected constitute the type in which relief might be expected by resection of the superior hypogastric plexus. When the pain is extensive and extends above the proper zones, the case would probably be one for chordotomy, although it must be remembered that strong impulses may jump several segments and in that way disturb one's observations. I feel that a superior hypogastric plexus resection might well be tried before chordotomy is resorted to, for the pain may be so modified that further work might not be necessary. In answer to the question regarding Leriche's operation of periarterial sympathectomy of the common iliac artery and external iliac artery, I feel the same I suspect as Dr Frazier does that is, that since the sympathetic distribution to the extremities is a segmental one, much may not be gained by this type of sympathectomy. However if the pain in the lower extremities is close to the inguinal ligament it is possible that a periarterial sympathectomy may be of some value. Care must be taken in selecting cases for sympathetic neurectomy and I doubt whether any one man at this time will have a large series of cases to report especially as regards the classifications other than advanced carcinoma. I would further urge those who are contemplating doing this type of surgery that they first familiarize themselves with the structures attacked by study on the cadaver. It would be most unfortunate to have this work receive a setback at this time because some surgeon failed to pick up and resect the proper structures or did not resect a sufficient amount of nerve tissue. This I know has happened not only in pelvic but in other types of sympathectomies and it is most unfortunate.

INDICATIONS FOR ENTEROSTOMY

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Enterostomy as a therapeutic measure in intestinal obstructive lesions and in the distention of peritonitis has been quite generally accepted by the majority of surgeons. There has not, however, been a universal agreement concerning its indications or complete accord in the interpretation of its results. The general impression is gained that the operation is frequently done as a last resort when little or no result may be logically expected. It must also be recognized that many patients, apparently treated successfully by enterostomy, might recover without drainage of the bowel if properly treated by modern supportive methods.

The logical use of enterostomy as a drainage operation involves some understanding of the pathologic changes and perverted function present in diseases associated with distention of the bowel. It has been quite conclusively shown that a bowel which retains its normal muscle tone and peristaltic activity does not absorb substances it should not absorb. If, however, blood supply to the bowel wall is damaged, the toxic content may reach the blood stream and produce symptoms.¹ After the bowel is paralyzed from overdistention, drainage of more than a short segment cannot be anticipated. If peristalsis is still active, drainage of the content of the small bowel may be expected, provided the enterostomy tube is functioning. Enterostomy is indicated to remove from the bowel its content of gas and liquid, not primarily to prevent absorption of toxic material but to prevent overdistention and paralysis.

Statistical studies have generally not shown that enterostomy decreases the mortality of intestinal obstruction and peritonitis.² Such statistics are of doubtful value, since they do not sufficiently consider that many enterostomies have been done as last resort operations when hope of adequate bowel drainage could not reasonably be entertained. It would seem that rather too much has been expected of enterostomy and not sufficient attention given to its indications and limitations.

The indications for intestinal drainage have grown less in recent years, since the chemical changes and disturbed physiology of the body, incident to obstructive lesions of the stomach and small intestine, are better understood. By maintaining the chemical and water balance, the tone of the intestine is in some degree improved. The use of morphine in adequate doses also increases the tone and rhythmic activity of the intestine. By these methods, overdistention is better controlled than formerly, thereby decreasing the indications for enterostomy.

High jejunostomy has received more than its share of commendation as a means of relieving distention of the upper part of the small bowel. It is very doubtful whether as much can be accomplished with a high jejunostomy as with an indwelling duodenal or stomach

tube. With the latter, the stomach and the upper portion of the intestine may be frequently aspirated of its contents or may be continuously kept empty by light suction.³

A summary of indications for enterostomy may be listed as follows:

- 1 For acute intestinal obstruction as a preliminary operation
- 2 As an adjunct to exploration and release of simple intestinal obstruction
- 3 As an adjunct to resection of the bowel for volvulus or other strangulation
- 4 After operative relief of intussusception
- 5 For obstruction due to lower abdominal peritonitis
- 6 For postoperative obstruction

Undoubtedly, complete surgical relief of a mechanical intestinal obstruction is always desirable when the condition of the patient will permit such an operation without too much danger to life. Many times the patient is too ill for an extensive procedure and in such cases enterostomy is helpful as a part of the treatment preliminary to operative relief of the actual occlusion. Exploration of a complete obstruction should not be delayed following enterostomy longer than is absolutely necessary to control the distention and restore the chemical and water balance. I have had two patients who developed necrosis and perforation at the site of the obstruction within two days following successful ileostomy. Both patients died of a diffuse peritonitis. Following an operation for relief of an obstruction or resection of a strangulated intestine, enterostomy just proximal to the site of obstruction is indicated to aid in a rapid relief of distention and to protect the damaged intestine until function is restored. After reduction or resection of an intussusception, drainage of the small bowel is also an operation of choice.

Obstructions following operations on the lower part of the abdomen or secondary to pelvic peritonitis are usually best treated by enterostomy. It is frequently quite difficult to determine whether or not a true mechanical occlusion exists. Loops of intestine may be only temporarily thrown out of function by adhesions or infection. An enterostomy will often relieve the distention until the function of the intestine has been spontaneously restored, and no further operation will then be indicated. An exploration to relieve such an obstruction is usually accompanied by grave danger. If peristalsis is still active, as shown by inspection and auscultation, enterostomy is successful in a high percentage of cases.

If a generalizing peritonitis has developed, it is doubtful whether an enterostomy is of much value. Animal experiments have shown that life is not prolonged by enterostomy in the treatment of diffuse peritonitis.⁴ In a series of eighteen patients, treated by enterostomy for peritonitis developing as a complication of intussusception, carcinoma of the colon, appendicitis, abortion, congenital anomaly, pelvic operation, ulcerative colitis and intestinal obstruction with perforation, all but one died. That somewhat ill defined group spoken of as paralytic ileus is usually not successfully treated by enterostomy. If an enterostomy is successful, the condition is not true paralytic ileus.

If proper function of an enterostomy tube is to be expected, it must be given constant attention. Frequent

From the University of Kansas School of Medicine.
Read before the Section on Surgery General and Abdominal at the Eighty Fourth Annual Session of the American Medical Association Milwaukee, June 16, 1933.

1 Gatch W D, Owen J E and Trusler H M. The Effect of Distention of the Bowel on Its Circulation and on Absorption from Its Lumen. *Tr Western S A* 1931 p 521.
2 Van Beuren E T Jr and Smith B C. The Status of Enterostomy in the Treatment of Acute Ileus. *A Statistical Inquiry Arch Surg* 15 288 (Aug) 1927.
3 Shellen H J. Enterostomy. *A Consideration of the Literature* *ibid* 25 943 (Nov) 1932.

3 Wangenstein O H. Therapeutic Considerations in the Management of Acute Intestinal Obstruction. *Arch Surg* 26 933 (June) 1933.
4 Orr T G and Haden R L. Enterostomy in the Treatment of General Peritonitis. *Arch Surg* 18 2159 (May) 1929.

injections of salt solution are indicated to maintain its patency. In selected cases, water and salt may be given through the tube to test the recovery of the bowel or to stimulate peristalsis.

The enterostomy technic of choice for drainage of the intact bowel is that described by Witzel, with a 16 or 18 French soft rubber catheter or a rubber tube of comparable size. When possible, the omentum should be interposed between the suture line in the intestine and the abdominal wall. Such an enterostomy seldom leaks and will quickly close when the tube is removed. All suturing of a distended intestine should be very carefully done to avoid tearing or pressure necrosis. Aspiration of the distended loop with a trocar before sutures and tube are placed will avoid soiling.

In general, it is best to place an enterostomy near the site of the obstruction. Frequently, however, the exact location of a small bowel obstruction cannot be determined with safety. Rather than subject an ill patient to extensive exploration, it is usually wiser to choose the first loop of distended bowel presenting through a right or left rectus incision and drain at that point.

CONCLUSIONS

1 High jejunostomy may be adequately replaced by an indwelling tube in the stomach or duodenum through which may be aspirated the stomach and regurgitated upper intestinal content.

2 In properly selected cases, an enterostomy is a valuable operation and may be life saving. It must neither be considered to be a court of last appeal nor be expected to bring back to life the moribund. There is a danger in too much dependence on enterostomy to the exclusion of more logical treatment.

3 Enterostomy cannot be successful if the intestine is paralyzed.

4 Enterostomy is indicated to drain a distended intestine of gas and liquid to prevent overdistention and not primarily to drain off toxic material within the bowel to prevent absorption. Absorption of toxins from an obstructed bowel does not begin until the circulation of the bowel wall is impaired, after which enterostomy is usually unsuccessful.

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ABSTRACT OF DISCUSSION

DR W. D. GATCH, Indianapolis. I wish to express agreement with all of Dr. Orr's conclusions. I have been interested in the study of the effect of distention of the bowel on the circulation through the bowel wall and on absorption from its lumen. I have demonstrated that gangrene of the bowel can be produced by distention alone without interference with its mesenteric circulation. In intestinal obstruction, distention of the bowel is the one condition that must be relieved, as Dr. Orr has emphasized, before the bowel is paralyzed and unable to move its contents of gas and fluid to the enterostomy tube. In cases of advanced obstruction from any cause, enterostomy will be of value if audible borborygmi are still present. If none can be heard it is probably too late to hope for benefit from the operation. However, I think that even in these extremely advanced cases the operation should be done; it may do some good. The modern nonleaking aseptic enterostomy is one of the most useful of operations. Its use in advanced appendicitis will greatly diminish the death rate. It will also rescue many neglected cases of mechanical ileus. I have been doing enterostomy in advanced appendicitis for a number of years. I find that it is not necessary in many cases even when the case is seen at operation to be far advanced. I rarely do an enter-

ostomy at the time of appendectomy. I watch the patient's course after operation very carefully and listen to the abdomen at frequent intervals. As soon as the patient vomits material that has an odor I at once consider the possibility of enterostomy. I find it a great help to take a flat plate of the abdomen at that time to see the gas patterns. If the plate shows loops of small bowel which have a diameter of from $2\frac{1}{2}$ to 3 inches, I think enterostomy should be done at once. It should be done at a time when one still hears good, loud borborygmi. My results under these conditions have been uniformly good. The advantages of the Witzel operation are that it can be done without risk under local anesthesia even on a moribund patient and that it requires no secondary operation to close the opening in the bowel.

DR J. SHELTON HORSLEY, Richmond, Va. One of the most valuable contributions to the study of intestinal obstruction in the last two decades has been made by Dr. Orr and his associates. His accomplishments have been both negative and positive. He has shown the necessity of preventing the marked fall of blood chlorides in high obstruction and this by giving salt. The negative contribution has been exploding the theory of a specific toxic material as the cause of the symptoms of obstruction. Dr. Gatch has called attention to another indication for enterostomy, that of feeding, but enterostomy in obstruction finds probably its most important field, especially in postoperative obstruction. Lymphatic adhesions coming on a few days after operation usually clear up in a week or two but in the meantime enterostomy is demanded. Obstruction that occurs long after an operation, a month or more, or without any operation, should be thoroughly explored, because not infrequently beginning gangrene or a volvulus or some other lesion exists that could not be recovered from without a radical procedure. Enterostomy in these cases, however, is extremely valuable as an adjuvant because if there is marked distention there is also an impairment of peristalsis, and even though the obstructive lesion may be removed the bowel may not be able readily to empty and has to be helped along. In addition to absorption from the intra-intestinal pressure, it must be remembered that in peritonitis there is also peritoneal absorption. With a septic exudate in the peritoneal cavity the pressure of the distended bowel will force into the peritoneum more of the toxic material from the peritonitis than if the bowel were not distended. So enterostomy has an indication to relieve not only the intra-intestinal pressure but the external pressure as well. The oblique enterostomy with a tube is usually excellent in obstruction. When, however, it is necessary to do an enterostomy in order to rest the colon as in the multiple stage operation on the colon for malignant conditions, I think the best thing is to bring up through a muscle-splitting incision the ascending colon onto the abdominal wall, put a glass rod under it, probably suture in a catheter for a day or two, and then incise the cecum, so that absolutely all the intestinal contents are voided through the enterostomy and complete rest is given the distal colon. In two or more weeks a resection is done, and in the third stage the enterostomy is closed. In the technic of Dr. Orr, the catheter is transfixed with the last external intestinal suture. This may be a potential source of infection for it is not fully protected from the peritoneal cavity. I place a purse-string suture, perforate the intestine within its grasp, close the purse-string suture, and then transfix the catheter with the end of the purse-string suture. The catheter is then buried by a row of sutures and the point of transfixion is thus fully covered. After this is done a fine catgut suture placed just where the catheter emerges from the bowel is passed through the parietal peritoneum. There is then no necessity of bringing the omentum over the enterostomy, and the operation seems to be about as safe from the production of peritonitis as it can reasonably be.

DR GEORGE A. HENDON, Louisville, Ky. Statistics have appeared in the literature which seemed to indicate that more patients die when enterostomies have been performed on them than when in similar circumstances these were not done. It is also an indisputable fact that more patients die on whom medical consultations have been held than those who had no medical consultations for the simple reason that in most cases consultations are resorted to after the battle is lost. If enterostomies were performed at the right time there would be

a very material and striking change in the mortality statistics. By the right time I mean the time when the primary operation is performed. I think that surgeons should have judgment enough to select the cases in which an enterostomy would be of advantage. Because I did not possess that judgment, I have gone to the trouble of devising an operation that is so simple that if it does not do any good it surely cannot do any harm. Dr Rankin was kind enough to include an illustration of this operation in the new work on the colon and rectum, by Rankin, Buie and Bergen. Any operation that contemplates the transfixion of an intestinal wall to a rubber tube is mechanically unsound, for the simple reason that it is a fundamental principle that when substances of unequal density are bound together the one with the least density will yield when there is any stress or strain exerted on it. Most of the intestines requiring enterostomy have disintegrated walls, and the slightest tension will produce a tear, through which leakage will occur. When convalescence is established the catheter can be removed if it comes out easy, or it can be cut off even with the abdominal wall and dropped inside the bowel to be evacuated through natural channels. I recommend this operation because it is simple and one need not hesitate to do it in doubtful cases. It never leaves a fistula.

ECTOPIA LENTIS

WITH REPORT OF A CASE OF TOTAL DISLOCATION,
DIRECTLY DOWNWARD

WARREN D. HORNER, M.D.

AND

SOL MAISLER, M.D.

SAN FRANCISCO

Ectopia lentis is a congenital displacement of the crystalline lens of comparatively rare occurrence, it must be distinguished from the acquired dislocations which develop spontaneously or as the result of trauma. Ectopia of the lens is ordinarily bilateral and symmetrical in both eyes. Knapp's¹ statement of its occurrence as approximately 1 in 5,000 cases denotes the rarity of the condition. The oldest reference found in the literature pertaining to ectopia is that of von Graefe,² who, in 1854, described the condition and called particular attention to its hereditary nature. The German and the English schools are amply represented in the early reports, the former by Stellwag von Carion's paper,³ which appeared in 1856, and Sippell's⁴ book, which was published in 1859, the latter by Dixon's⁵ report in 1857 and Jeaffreson's⁶ report in 1871. Although articles have appeared almost yearly since these early dates, they have failed to include a comprehensive bibliography.

The strong hereditary tendency in ectopia lentis is well emphasized by several authors. Morton⁷ recorded its occurrence in five successive generations comprising ten persons. Lewis⁸ found sixteen cases in six generations of one family. Adams (quoted by Folk⁹) reported observation on a family of nine children, seven

of whom had dislocated lenses. Cameron,¹⁰ reporting on four successive generations, found fourteen persons affected, of whom only one was a male. In regard to transmissibility, Folk⁹ stated that of marriages between twenty-two affected and nonaffected parents, seventeen offspring were affected, proving a ratio of almost three to one. It is believed that the condition is more common in Anglo-Saxons than in persons of the Latin race, and also that a majority of the patients are intelligent and of good health, with the possible exception of other associated congenital diseases of the eye.

Several theories have been advanced concerning the causative factors of ectopia. These are reviewed in Kennedy's excellent paper.¹¹ He stated that most observers concur with the theories first offered by von Graefe and Quaglini with reference to a developmental defect in the suspensory ligament. This defect is occasioned by a faulty or delayed closure of the ocular cleft. In considering the stages in development of the suspensory ligament, it may be recalled that the primitive lens remains in contact laterally with that portion of the secondary optic vesicle subsequently destined to become the ciliary body. The lens becomes encircled by a fibrovascular sheath which forms adhesions from contact with a portion of the secondary optic vesicle. As the eyeball enlarges, it does so at a greater rate than the lens. Consequently, that portion of the ciliary body which was in contact with the lens grows away from it, and the adhesions previously formed between them become stretched, to become the delicate fibers of the suspensory ligament. In explaining an upward dislocation, it may be assumed that the absence of fibers of the zonule of Zinn in the inferior region offers no resistance to the pull upward on the lens. According to the theories of Hess and Treacher Collins, displacement may also be occasioned when the adhesions between the ciliary body and the margins of the lens are denser and less elastic on one side than on the other, so that they expand less readily than the opposing ones. This would account for the cases of ectopia in which the fibers of the suspensory ligament are seen in the aphakic area. Another etiologic factor may be that of traction of the hyaloid artery and bands in the vitreous. Badal and La Grange believe that all such eyes are myopic and the lens is too small for the space it should occupy. As a result, the overstretched zonula yields and the lens is displaced in the direction of least resistance. However, contrary to this belief of a small lens, Lindner (quoted by Parsons¹²) has reported four cases in which the lenses were larger than normal.

In reviewing the causes of developmental anomalies, Collins and Mayou¹³ aptly stated, "At present we are unable to say what causes the usual orderly cycle of transformations which ensue after the fertilization of the ovum and consequently, frequently unable to account for disorderly occurrences in that cycle. It is perhaps more surprising that such a complicated structure as the eye should so often develop in a uniform way than that occasional irregularities should occur." Relative to ectopia, the work of biologists such as Guyer, Stockard (quoted by Kennedy¹¹) and others becomes sig-

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2. von Graefe, Arch. f. Ophth., 1, 345, 1854; 2, 250, 1855.

3. Stellwag von Carion, Karl, Wehnl. d. k. k. Gesellsch. d. Aerzte in Wien, 2, 797 and 813, 1856.

4. Sippell, F. W. T. *Die spontane Luxation der Linse und ihre angeborene Ektomie*. Marburg: Elwert, 1859.

5. Dixon, Ophth. Hosp. Rep., London, 1, 54, 1857.

6. Jeaffreson, Ophth. Hosp. Rep., London, 7, 187, 1871.

7. Morton, Ophth. Hosp. Rep., London, 9, 435 (pt. 3), 1879.

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10. Cameron, E. P. *An Interesting Example of Hereditary Dislocation of the Lens Occurring in Four Successive Generations*. Brit. J. Ophth., 10, 384 (July), 1926.

11. Kennedy, E. W. *Complete Ectopia Lentis: Report of Case*. New York State J. Med., 25, 117 (Jan. 30), 1925.

12. Parsons, J. H. *The Pathology of the Eye*. New York: G. P. Putnam's Sons, 1906, vol. 3, p. 809. *Bibliography 1854-1897*, ibid., p. 812.

13. Collins and Mayou in Pyle, W. L. *An International System of Ophthalmic Practice*. Philadelphia: P. Blakiston's Son & Co., 1911, p. 1.

nificant It is known that during the second week of embryonic development, the primary optic vesicles become differentiated, appearing as offshoots from the forebrain Ideas differ as to how this is brought about Stockard, from his experiments, believes that the cells responsible for the formation of the eyes have their origin in the median plate of the central nervous system By excising a portion of this structure, he could prevent the formation of eyes Early removal of a lateral portion of the plate, however, did not prevent formation of eyes nor displace the optic vesicles, which were found to be situated laterally as usual

By exposing fresh fish eggs to heat, cold and chemical fumes, Stockard found that he was able to obtain arrest of development of the optic vesicles ranging from cyclopia to essentially normal eyes The end-result depended on the period of development at which the inhibiting agent was introduced

Guyer pulverized rabbits' lenses and injected them into fowls When serum of these lens-sensitized fowls was next injected into pregnant rabbits, the offspring showed abnormalities such as coloboma of the iris and choroid, cataracts and displacement of the lenses, together with variations in the size and situation of the globe By mating these defective rabbits, he obtained progeny with abnormalities which tended to increase in succeeding generations He has succeeded in carrying a defect through nine generations and believes that when once obtained, the defect can be transmitted indefinitely

In ectopia lentis, the direction in which dislocation may occur varies and, as stated heretofore, is usually symmetrical in the two eyes Of seventy-three cases reported by Dorsch,¹⁴ displacement upward in both eyes occurred in thirty, up and out in eighteen, up and in in eight, down in five, inward in four, outward in three and down and out in one In one case the right lens was inward, while the left one was down and in Three cases showed asymmetrical displacement Two of these showed the right lens down and out, while the left was down and in In the third case, the right lens was down and in but the left was up and in Collins and Mayou¹⁵ stated that displacement never occurs directly downward, although in one of Adams' cases, mentioned by Hardy,¹⁶ such a dislocation is described In 1874 Page¹⁷ reported a case of unilateral ectopia lentis

The edge of the lens in ectopia may or may not occupy the pupillary region, its margin being seen in certain instances only after dilatation of the pupil The existence of ectopia lentis may be suggested primarily by the accompanying iridodonesis In large pupils which reveal an edge of the lens this aperture is divided into an aphakic and a phakic portion with a resultant monocular diplopia The anterior chamber is deepest on the aphakic side, the side from which the lens is displaced By reflected light the edge of the lens appears as a dark crescent, owing to the prismatic refraction In many cases the suspensory ligament is completely absent in the region corresponding to the aphakic area the lens being dislocated away from the point of the absent zonule Absence of the suspensory ligament produces a movable lens which may push forward and interfere

with the passage of fluids through the pupil and thus produce a rise in tension Isnel Deschamps and Clerc¹⁸ reported such a condition in two sisters presenting congenital dislocation of the lens accompanied by glaucoma Iritis may result from the migration of the lens into the anterior chamber Allport and Smith¹⁹ noted a case of bilateral luxation of the lens in which this structure was entirely unattached and would float freely through the dilated pupil into the anterior chamber or return to its fossa according to the position of the child's head As seen with the ophthalmoscope, the curved edge of the lens is not always regular, but may show slight depressions or elevations The depressions in the border may amount to a notch, constituting a coloboma of the lens, as reported by Clark²⁰ and Giri²¹ Other associated defects which may occur with ectopia lentis are coloboma of the iris, usually in the opposite direction, corectopia, iridemia, nystagmus and a persistent hyaloid artery Crebbin²² reported a case of congenital dislocation showing opaque lenses and a persistent pupillary membrane The lenses, however, are usually clear in ectopia lentis in contradistinction to the loss of transparency seen in traumatic dislocations

Corrective measures for ectopia lentis consist primarily in refraction and secondarily in surgical treatment in appropriate instances The refraction in typical cases is myopic owing to the unopposed elasticity of the lens This is well illustrated in a case reported by Hess (quoted by Parsons,¹² which presented a myopia of 15 diopters in the phakic area while the aphakic area measured plus 10 diopters Clark,²⁰ who studied the refraction in a series of cases over a period of years, found that the myopic component remained stationary There was, however, a periodic variation in the cylindric correction owing to changes in the lenticular astigmatism This was due, in his opinion, to a shifting of the lens in its hyaloid fossa The results of refraction are, however, for the most part disappointing because of the accompanying amblyopia, a finding commented on by Jeaffreson⁹ as early as 1871

The surgical problems include needling or extraction of opaque ectopic lenses and the relief of secondary glaucoma Needling entails transfixation of the lens by a second needle while a capsulotomy is being performed Isnel, Deschamps and Clerc¹⁸ have reported cases of glaucoma in which the patients were successfully treated by sclerocorneal trephine The use of Heine's cyclo-dialysis may be considered in appropriate cases

The following case is reported not only because of the general rarity of ectopia lentis, but more particularly because of the unusual displacement directly downward As previously noted, Dorsch¹⁴ found only 5 such instances in a total of 73 cases Assuming that ectopia lentis occurs once in 5,000 cases (Knapp¹) and that only 5 in 73 are dislocated downward, the incidence of the case reported would appear to be about 1 in 73,000 Some authors apparently do not follow Dorsch's statistics (1900), for as late as 1911 some authorities deny that congenital dislocation ever occurs directly downward

18 Isnel Deschamps and Clerc Sub-luxations des cristallins bilatérales et congénitales chez deux sœurs Bull et mem Soc franc ophth 42 407 1929

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20 Clark C F Coloboma and So-Called Congenital Dislocation of the Lens Ohio State M J 16 338 (May) 1920

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22 Crebbin A R Persistent Pupillary Membrane and Congenital Ectopia Lentis Am J Ophth 12 87 (Feb) 1929

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REPORT OF CASE

History—L. L., an American boy, aged 10, was seen in consultation at the San Francisco Hospital in February, 1932, while under treatment for osteomyelitis of the femur. Poor vision and tremulous irises were noted during the general physical examination. Only the condition of the eye will be described here.

The parents were Italians and were living and well. One brother, aged 6, was normal. No congenital deformities were known in the parents' families.

The patient's birth was normal. He had no illness until 9 years of age, when osteomyelitis of the left femur required hospitalization for nine months. At the time of examination he walked without a crutch. There was no history of injury or accident. The Wassermann reaction was negative. He was noted as a baby to hold objects very close to the eyes. He first wore glasses at the age of 7. He was in the 4 A grade sight-saving class, and made satisfactory grades.

Ocular Examination—Vision in the right eye was limited to the perception of fingers at 13 feet, with +10.00 sph \ominus +2.50 cyl 90°, vision was 0.3. Vision in the left eye was limited to the perception of fingers at 8 feet, with +10.00 sph \ominus +3.00 cyl 100°, vision was 0.3. Examination for near vision showed J 1.50, with correction and +3.00 add J 75, in the two eyes.

Neither eye showed injection. The movements of the eyes were normal. The pupils were equal and regular but were slightly oval in the vertical diameter. They reacted normally to light, and showed a slight but definite reaction to convergence. There was coarse iridodonesis in each eye when the patient looked to the side. The anterior chambers appeared of similar depth throughout. The right eye showed a flagellum-like strand of persistent pupillary membrane attached to the lesser circle of the iris. It was not present on the left. The irises showed no coloboma. Tension (Schiotz) was 20 mm in both eyes.

Examination of the Fundi—The right eye showed fine, floating, dustlike vitreous opacities. The lens was completely subluxated directly downward, no margin of the lens was seen in the pupil. About two thirds of the upper circumference of the lens was visible, appearing to be at the level of the ciliary body. The edge appeared regular and pigmented and contained a few dark fringelike strands which looked gray under direct illumination and which extended free into the vitreous. The lens appeared perfectly transparent, retinal vessels being clearly seen through it, and was in the erect position. It oscillated with the vitreous, but assumed a constant position in relation to a particular retinal vessel which was used as a reference point. With the head tipped backward over the edge of a table, the lens still remained below the pupillary margin.

The fundus details were quite clear. The disk was oval in its vertical diameter and was sharply demarcated except temporally, where there was a lighter crescent about one-half disk diameter in width, nasally there were a few flecks of pigment belonging to the choroidal ring. The retinal vessels appeared normal. The macula contained numerous yellowish areas of depigmentation, some of which appeared streaklike in a horizontal direction. There were also occasional dotlike pigment deposits, which, together with the depigmentation, established the diagnosis of old, central chorioretinitis. The peripheral fundus was clear.

The left eye showed an identical vitreous. The dislocation of the lens was similarly directly downward, but a trifle lower than on the right. Its edge appeared clean cut, regular and dark but contained no grayish fringe, which was so noticeable on the right. It was equally transparent and erect. With the head tipped backward over the edge of a table, however, the upper edge of the lens became just visible in the pupillary area, but returned to its original position when the patient assumed the erect status.

The disk was oval vertically and had a similar temporal crescent, showing choroidal vessels and a few pigment granules. The macula showed some increased pigmentation but no definite lesions.

One was unable to see any part of the lens by the slit lamp. Perimetric fields showed no appreciable defect. Color vision

and gross stereoscopic vision were normal. The ophthalmometer readings were right eye, $87^\circ \pm 3.50$, left eye, $100^\circ \pm 3.2$. Refraction was typically aphakic.

R	E	+	10.00	sph	\ominus	+2.50	cyl	90	V	0.3	partly	
L	E	+	10.00	sph	\ominus	+3.00	cyl	100	V	0.3	partly	
										Add	+3.00	J 75 O 1

Since this result was at variance with the old glasses, a new prescription was given with a plus 3.00 added in a ground bifocal. The patient had previously been wearing a +9.00 sphere with +1.75 cyl 90° for both eyes.

During the past year the patient has made a noticeable improvement in school work (sight-saving class), he is quite comfortable with the bifocals. Corrected vision is now 0.3 partly in each eye and J 62.

SUMMARY

A case of congenital, bilateral, total dislocation of the lens is reported in a boy of 10, the dislocation being directly downward. This position is stated to be exceedingly rare by most authors, while its existence is denied by some. It is accompanied by an old monocular chorioretinitis and a partial persistent pupillary membrane but by no other congenital anomalies, nor by glaucoma.

In order to overcome the aphakia, bifocal lenses were prescribed and have been successfully worn for the past year, with definite improvement in both distant and near vision.

384 Post Street

ABSTRACT OF DISCUSSION

DR WILLIAM ZENTMAYER, Philadelphia. This, I believe, is the first time since 1898 that this subject has been brought to the attention of the section. The outstanding feature of this anomaly is its hereditary and familial tendency. Instances even more striking than those noted by the authors have been reported. R. M. Gunn records its occurrence in seventeen members of five families of twenty-two children. Dehenne and Baillart report a history of four generations affected in which all the six descendants of the first showed double luxation. There are a number of similar case histories in the literature. The descent seems not to be of like nature in all cases. Gunn states that in his case it was not a mendelian recessive. In two families it acted as a pure dominant. In Francheschetti's case it was a recessive hereditary condition manifested through consanguinity, while Kotlarveskaid, basing his observations on thirteen cases, considered it of a hereditary dominant type. Whatever the genesis of the condition may be, two factors are significant: the occurrence at times of a coincident ectopia, and the frequent association of myopia, 60 per cent. The first would indicate the persistence of a mesodermal strand as the cause of both anomalies, and the latter a stretching of an inherited weak zonule as the more the eye stretches the more the fibers are stretched. This probably accounts for the fact that the ectopia increases with time and in many instances becomes a complete luxation (Rotth). The myopia is not in every case axial but as stated by the authors may be lenticular. In one of my cases the fundus presented myopic changes. Butler, Mesmann and Hegner report instances of downward dislocation. In a number of cases there was a deformity of the skull, sometimes associated with impaired mentality. Operation, when called for by secondary glaucoma or because of cloudiness of the lens presents difficulties. The statement that needling entails transfixation is a correct generalization, but in individual cases needling as ordinarily done has been successful. I have notes of only two cases in which operations were performed. In 1926 I operated on a girl, aged 7 years. The lenses were dislocated downward and inward and were cloudy. Three dissections were performed on the left lens and absorption resulted. The second case was that of a boy, aged 16 years. The lenses were dislocated downward and inward. There was noncongestive secondary glaucoma. A simple extraction with a loop was safely accomplished in the left eye with a resulting active round pupil. Visual acuity equaled 6/20. As a result of this success the other eye was similarly operated on and lost through iridocyclitis resulting in atrophy of the globe.

VITAMIN B DEFICIENCY AND THE
ATROPHIC TONGUE

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AND

WILLIAM S MIDDLETON, MD

WITH THE COLLABORATION OF

HARRY STEENBOCK, PhD

MADISON, WIS

Glossitis with atrophy of the lingual papillae to ultimate baldness constitutes a conspicuous manifestation of a number of diseases. Recent occasion¹ has been taken to review this subject. Among the conditions in which the atrophic tongue has been described are pernicious anemia, achlorhydric anemia, anemia of pregnancy, pellagra, sprue, Plummer-Vinson syndrome, malnutrition attended by dysentery and anemia, intestinal stricture, pyloroplasty complicated by peritonitis, *Dibothriocephalus latius* infestation and achlorhydria. In the quest of an explanation for this interesting phenomenon such an array of conditions may be confusing, yet it offers certain points of logical attack on the problem of pathogenesis.

For a long period the infectious background of the glossitis of pernicious anemia was accepted on the basis of the work of Hunter² and of Schneider and Carey.³ Later, Wilkinson and Oliver⁴ and Oatway and Middleton⁵ observed a definite relationship between the incidence of achlorhydria and glossitis. Witts,⁶ on the other hand, pointed out that, whereas gastric anacidity was the usual concomitant, cases of anemia and malnutrition were available in which the glossitis appeared with normal gastric acidity. Minot and

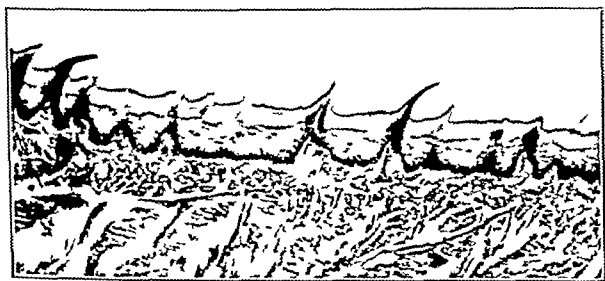


Fig 1—Section of rat tongue after thirty nine days on a vitamin B deficient ration (Courtesy of Dr Gorton Ritchie)

Murphy⁷ reported the complete remission in the glossitic manifestations of patients with pernicious anemia receiving liver. Isaacs, Sturgis and Smith⁸ noted mild

recurrences of glossitis even while the patients were on liver therapy. Hence they concluded that "liver does not seem to be entirely specific for this symptom." The inclusion of sprue and pellagra among the diseases characterized by the atrophic tongue immediately suggests the possibility of a deficiency explanation for this manifestation in the entire group. Moersch and Conner⁹ invoked a dietary background for the changes incident to "hysterical dysphagia." Ungley¹⁰ called attention to an obvious parallelism between pellagra and pernicious anemia in their common glossitic and gastro-intestinal manifestations. He concluded that these symptoms in pernicious anemia might well result

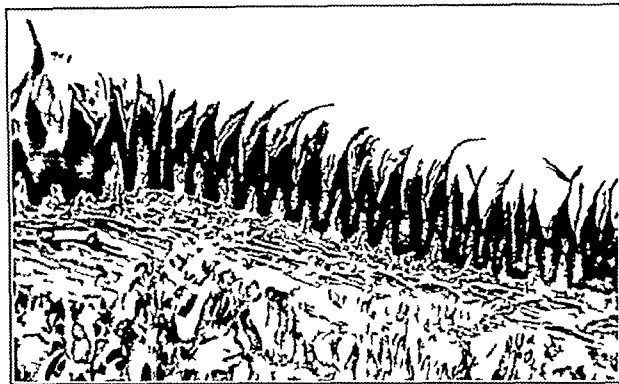


Fig 2—Section of normal rat tongue (Courtesy of Dr Gorton Ritchie)

from a metabolic disturbance or from a deficiency rather than from an infection.

Castle's¹¹ epochal work advanced sound evidence that, as a rule, the actual fault in pernicious anemia resides in the subject and not in his diet. An absence of the intrinsic factor in the gastric juice of patients with pernicious anemia renders them incapable of assimilating from the diet certain elements necessary for orderly erythropoiesis. Later Strauss and Castle¹² concluded that the extrinsic factor "may now be defined as a substance closely related to vitamin B₁₂, if not vitamin B₁₂ itself." Interestingly, Gerstenberger¹³ had previously observed a favorable response of aphthous and ulcerative stomatitis to water soluble vitamin B. Two of his reported cases showed an acute glossitis which likewise improved under this therapy. Lewis's¹⁴ survey of this subject was most comprehensive and he concluded that the smooth tongue in all probability represented a deficiency manifestation. He made a further important observation in a patient with sprue who presented the blood picture of pernicious anemia. The tongue of this patient was normal and the gastric juice contained free hydrochloric acid, pepsin and rennin. However, when this gastric juice was incubated with 200 Gm of beef and fed to a pernicious anemia patient, no remission occurred in the blood picture. The product of the interaction between normal

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Read before the Section on Gastro Enterology and Proctology at the Eighty Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

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gastric juice and beef, on the other hand, subsequently induced a prompt reticulocyte response in the same patient. Lewis concluded that the absence of the intrinsic factor did not explain the lingual atrophy.

The deficiency theory seemed the most fruitful point of attack on the problem, and at the time of the institution of the experimental study (December, 1931) it was deemed logical to investigate the influence of vitamin A deficiency on the tongue because of the evi-

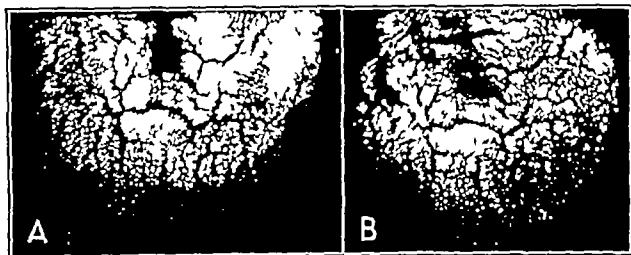


Fig. 3 (case 1)—Tongue prints A before treatment B after high vitamin B diet

dence of an infectious background adduced by Hunter,² and by Schneider and Carey.³ A Pavlov pouch was prepared in a dog's stomach by Professor J. A. E. Eyster to render frequent determinations of the gastric acidity possible. After certain inconsequential preliminary studies, a biopsy of the dog's tongue was taken, Feb. 16, 1932 and the animal was placed on a diet deficient in vitamin A for a period of three months. A second biopsy was then taken and no microscopic changes were observed in the surface markings or in the deeper structures of the tongue.

Fowls were suggested as the most available experimental subject for vitamin B studies, but certain technical difficulties presented themselves, particularly in the osseous tissue in the chicken's tongue. Accordingly, the rat was the next choice by reason of the highly serrated papillae that characterize the anterior two thirds of the dorsum of the tongue. Through our colleagues in the department of agricultural chemistry materials have been made regularly available after varying periods of standard vitamin B deficient rations. A number of rats were fed on a low vitamin B diet¹⁵



Fig. 4 (case 2)—Tongue prints A before treatment B after parenteral liver extract

After a period of thirty-nine days, and earlier in certain instances, these rats were observed to become scrawny and malnourished and to manifest polyneuritic symptoms. The tongues of these animals presented a

¹⁵ At present a group of rats is being fed a low vitamin B diet in an attempt to assign the specific responsibility for the atrophic glossitis. After the completion of our observation on the effect of vitamin B deprivation the preliminary report of Miller and Rhoads in the experimental production of sprue in dogs fed on a vitamin B deficient diet appeared, (Proc. Soc. Exper. Biol. & Med. 30: 540 [Jan.] 1933) and gave conclusive evidence of a glossitic reaction to this deficiency with ultimate papillary atrophy of a marked degree. Such evidence as our experimental studies on vitamin B deficiency in the rat may reveal will constitute a further report.

smooth and bald appearance as compared to the normal rat, whose papillae give the tongue a finely stippled, uneven appearance. The rats were killed. The characteristic microscopic picture is conveyed in figure 1. A section of the normal rat tongue is shown in figure 2 for comparison. Without exception there has resulted a marked degree of papillary atrophy, and this change has advanced to virtual effacement in certain instances. In areas of some tongues, denudation by ulceration has occurred. To check these observations a second group of rats was fed a similar low vitamin B diet over a period of from ten to eleven weeks. The microscopic studies of the tongues of this group revealed changes similar to those in the first group. A third group of young rats was fed a similar diet for the same length of time, and it is interesting that these rats developed a lesser degree of lingual atrophy than did the older rats for the same period of B deprivation. It is interesting that the round-cell infiltration and fibrosis of the tongue in pernicious anemia has not been completely reproduced in this experimental series. The time factor may enter into this discrepancy in the picture.

The clinical study of the atrophic tongue has been closely pursued for the past three years.¹⁶ Tongue prints on smoked paper have afforded permanent records of the progress of this condition under varying forms of therapy. Accordingly, following the same

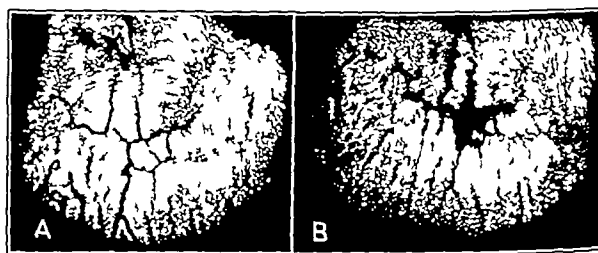


Fig. 5 (case 3)—Tongue prints A before treatment B after parenteral liver extract

technic,⁵ it was possible to evaluate the clinical application of the experimental evidence of a vitamin B deficiency in atrophic glossitis.

CASE 1—The first patient encountered in this study presented the classic picture of pernicious anemia. His tongue showed marked atrophy with flattening of the fungiform and filiform papillae anteriorly but was not completely bald. A tongue print was taken (fig. 3 A) and the patient was placed on a high vitamin B diet supplemented by one compressed yeast cake twice a day. For the period from Jan. 27 to Feb. 8, 1933, this regimen obtained and liver therapy was withheld. The blood count underwent a slight slump (from 2,270,000 to 1,920,000 erythrocytes) but there was an appreciable regeneration of the papillae, and the normal tongue markings were almost completely restored in this short time (fig. 3 B). The hematopoietic response on the initiation of liver therapy was prompt and satisfactory.

CASE 2—A patient with pernicious anemia showing similar lingual atrophy was placed on a high vitamin B diet without liver. As demonstrated in the tongue prints taken on admission (fig. 4 A) there was flattening and atrophy of the papillae over the anterior two thirds. After two weeks' time there was no appreciable change in the gross appearance of the tongue or in the prints. The subsequent addition of diluted hydrochloric acid effected no apparent benefit over a further period of ten days. As demonstrated by the tongue print (fig. 4 B) a slow return of papillae ensued on the addition of liver therapy in the form of a parenteral extract, but it did not parallel the hematopoietic response.

¹⁶ Middleton¹, Oatway and Middleton.

CASE 3—A patient with pernicious anemia presented an atrophy of the lingual papillae in the anterior and central portion of the dorsum on admittance (fig 5 A). The tongue was sensitive to touch. His condition was too precarious to defer liver support, but an effort was made to maintain a low vitamin B diet. The response of the erythropoietic centers was brilliant. On the fourth day after 20 cc of liver extract intramuscularly (equivalent to 100 Gm of whole liver), the reticulocytes rose to 148 per cent and the succeeding day reached 35 per cent. By the sixth day there was early evidence of regeneration in increased prominence of the fungiform papillae. Virtual normality of the gross appearance in the tongue was attained by the eleventh day. The tongue also lost its sensitivity (fig 5 B).

Clearly, certain divergences present themselves in this group of three cases of pernicious anemia. The prompt response of the glossitic manifestations of the first case on a high vitamin B intake without specific therapy directed toward the underlying anemia bespeaks a pure deficiency background. In the next two cases, however, other circumstances arise. In the second no response was observed on a high vitamin B diet, but the slow response on a low vitamin B diet intake with coincident liver therapy suggests a conditioned deficiency, in which event the absorption or assimilation of the lower B intake may be rendered more adequate by liver extract. The initial trial of a high vitamin B intake without liver was denied in the third case, but a similar explanation to that advanced in the second case may apply here. Finally, in both instances the parenterally administered liver extract may have had an independent action. West¹⁷ has reported the presence of vitamin B₂ in liver extract.

CASE 4—An unusual situation presented itself in this patient, who was admitted for the study of a grave anemia that had responded to desiccated hog stomach before entrance to the hospital. The case proved to be one of gastric polyposis presenting a completely bald tongue, achlorhydria and hypochromic anemia (38 per cent hemoglobin and 3,080,000 erythrocytes). The surface of the tongue was smooth and glistening, figure 6 shows an absence of the papillary markings. The patient was given a high vitamin B diet without liver but supplemented by one compressed yeast cake twice a day. In six days there appeared a series of innumerable pin-point white dots on the tongue, and when it was dried, these were shown to be slightly elevated above the surface. Unfortunately, these changes could not be demonstrated by the tongue prints. Further observation was rendered impossible by the discharge of the patient, but this apparent response constitutes the earliest in our experience.



Fig. 6—Tongue print showing complete lack of papillary markings

CASE 5—A patient with advanced ulcerative pulmonary tuberculosis suffered from intermittent diarrhea dependent on ileocecal tuberculosis. The tongue was completely bald (fig 7 A), and a hypochromic type of anemia prevailed (52 per cent hemoglobin and 5,150,000 erythrocytes). The gastric acidity registered 18 degrees of free hydrochloric acid. On a high vitamin B diet with added compressed yeast, regeneration of the lingual papillae occurred whenever the diarrhea could be controlled for a few days. The first evidence of regeneration was noted in the middle third of the dorsum of the tongue with the appearance of flat fungiform papillae (fig 7 B). A reinstitution of the diarrhea was early followed by the relative denudation of the tongue (fig 7 C). Several cycles of this order were observed.

Such prompt fluctuations in the lingual markings incident to the enteric state argue against a neurogenic explanation of the former. Apparently the factor of absorption conditions this deficiency in the presence of an adequate vitamin B intake.

These characteristic experiences lead to the conclusion that the atrophic tongue is dependent on a vitamin B deficiency. Experimentally, the condition has been regularly reproduced in rats on a vitamin B defi-

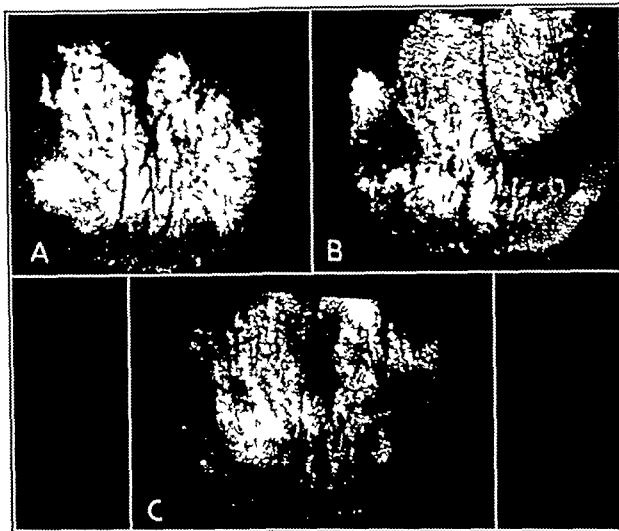


Fig. 7—Tongue prints. A before treatment. B after a high vitamin B diet. C high vitamin B continued but relapse in enteric condition.

cient ration. Clinically, the problem is not as clear cut. Instances of pure vitamin B deficiency will respond to an excess of the lacking substance. If the deficiency is conditioned by factors of impaired absorption and assimilation, the addition of the deficient vitamin to the diet may not be sufficient in itself to overcome the basic fault.

The work performed by Ivy and his associates¹⁸ on experimental gastrectomy establishes the narrowing of the margin of safety in erythropoiesis by this surgical procedure, so that anemia develops regularly in such animals under the strain of pregnancy. Analogous conditions may exist in pathologic states of the gastrointestinal tract to explain the improper assimilation of vitamin B, which is apparently required to maintain the normal lingual papillae. Certain evidences of minor relapses have been reported by Isaacs¹⁹ in patients with pernicious anemia receiving liver therapy. These symptoms include, among others, glossitis, anorexia, diarrhea and constipation. The fact that such relapsing manifestations occur seasonally (March most frequently) suggests a vitamin responsibility and indicates further a decidedly reduced reserve. Lastly, the apparent inconsistency of papillary regeneration on the parenteral injection of liver extracts after the failure of a high vitamin B diet alone to induce such a change may depend on the presence of vitamin B₂ in the liver extract or on an improved assimilation of the available vitamin B from the diet through the mediation of the parenteral extract. These circumstances add a further

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link to the chain of evidence in the group of so-called conditioned deficiencies so clearly defined by Minot,²⁰ and by Castle and his fellow workers²¹

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ABSTRACT OF DISCUSSION

DR FRANK D GORHAM St Louis The subject of vitamins and their relation to the so called deficiency diseases has become so complicated that most of us are unable to follow with any degree of orientation the course of events To me this is particularly true of vitamin B which is believed to be a factor in at least thirty metabolic disorders This deficiency may be due to improper diet or may be a result of our civilization or faulty machinery of a particular individual This investigation has led the authors to the conclusion that atrophic glossitis is most probably dependent on a vitamin B deficiency They were able to produce this condition in rats by withdrawal of vitamin B from the diet In the human being however their clinical studies were less conclusive but do suggest a possible fruitful field for further investigation They call attention to the fact that in man atrophic glossitis may occur in many conditions other than pernicious anemia Contradictory, and of especial interest are those patients who show free hydrochloric acid in the stomach

DR WILLIAM S MIDDLETOWN Madison Wis The discussion of Dr Gorham is sincerely appreciated We realize of course that the human subject is not the rat We appreciate, too, that there is some discrepancy in a further part of the question which we did not discuss in detail namely that our first results on B deficient rations in the rat have produced only inadequate atrophy of the papillae as compared with the results of Miller and Rhoads in their experimental sprue in dogs We are not convinced, in other words, that this is the only factor We know that B deficient diets can in rats produce the glossitic condition histologically which we recognize clinically in the several conditions that have been mentioned I believe that an open mind should be kept as to the mechanism of action as well as to the agent that is responsible for the entire story

TUBERCULOSIS OF THE GREATER TROCHANTER

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Tuberculosis of the greater trochanter causes localized pain and tenderness associated with swelling, which must be distinguished from tumor and other forms of infection It is common for the bursae about the trochanter to become involved, with a resulting fluctuating mass containing serum and broken down debris, more rarely, extension into the femoral neck or hip joint is the result

The literature on the subject is rather meager and consists largely of reports of cases in one report eleven cases of tuberculosis of the trochanter were presented Teale,¹ in 1870, described a case of tuberculosis of the bursa over the greater trochanter in which the gluteal tendon appeared to be a factor in pro-

longing the disease of the bursa He advised division of the structure for the purpose of removing all muscular tension In 1903, at which time he² reported another case, he mentioned the possibility of confusion of tuberculosis of the bursa and tuberculosis of the hip joint itself Thurston,³ in 1907, reported a case of bilateral tuberculous bursitis of the bursa, treated by excision with good results Wieting⁴ in 1904, reported the largest series of cases of tuberculosis of the greater trochanter and its bursa that had been reported to that time He believed that trauma, induced by the customary sitting posture assumed by the Turks, who made up his patients, was an important contributing factor in the etiology of the disease He stated his belief that the primary infection is usually in the trochanter and that it may spread by continuity to the bursa If the bursa only is explored and no apparent connection can be found leading to the bone, this is probably due to the fact that the tract through which the infection had passed had been plugged or healed He observed that in cases in which apparently only infection of the bursa existed, perfect healing followed surgical treatment

Cone,⁵ in 1911, spoke of the formation of rice bodies in bursa in connection with tuberculosis of these structures He also mentioned "primary sclerosing tuberculosis" of the bursae as described by Reinhardt,⁶ a condition we have not observed Clopton,⁷ who reported three cases in 1919 concluded that tuberculosis of the greater trochanter usually does not occur in childhood, and he stresses the probability of trauma as an etiologic factor, from the standpoint both of external trauma and of the trauma of muscle pull Swindt,⁸ in 1921 reported one case and also stressed trauma as an etiologic factor, in that infection is usually secondary to trauma Peabody,⁹ in reporting two cases brought out the importance of making a differential diagnosis of tumors and tuberculosis of the trochanter He also advised early intervention and excision of the affected area before the formation of sinuses Keith,¹⁰ in reporting a case, felt that the history physical manifestations and roentgenograms pointed to neoplasm Clopton, Peabody and Keith reviewed the fact that the greater trochanter is developed as an epiphysis and deduced that as such, it is as susceptible to infection with tuberculosis as in any other epiphysis of the long bones, hence the probability of primary infection in the bone and secondary in the bursa adjacent to the trochanter

The bursa most commonly involved with tuberculosis is the large and constant trochanteric bursa beneath the gluteus maximus, although the subcutaneous bursa of the trochanter or any other bursa about the hip may also be involved by the spread of the infection Spalteholz described sixteen bursae in the region

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From the Section on Orthopedic Surgery the Mayo Clinic Read before the Section on Orthopedic Surgery at the Eighty Fourth Annual Session of the American Medical Association Milwaukee June 14 1933

1 Teale T P On the Simulation of Hip Disease by Suppuration of the Bursa over the Trochanter Major Lancet 2 506 507 (Oct.) 1870

of the hip, and other observers have described as many as thirty-one. Most of these are not constant and are small, the most important, however, are the gluteus maximus bursa over the greater trochanter, the iliopectineal bursa, and the ischiogluteal bursa. The first one lies between the gluteus maximus muscle and the posterior and lateral surface of the greater trochanter. The iliopectineal bursa is constant and large and is situated between the iliopsoas muscle and the iliofemoral ligament, it often is directly connected with the hip joint. Thus the importance of this bursa can readily be seen when one considers the possibility of spread of infection from the bursa into the hip joint, or vice versa. The ischiogluteal bursa is frequently present between the gluteus maximus muscle, the origin of the biceps and semitendinosus muscles, and the posterior surface of the tuberosity of the ischium.

The literature reveals that tuberculosis of the greater trochanter and the bursa over the trochanter starts usually in adolescence and that it is to be distinguished from disorders of the hip joint and neoplasms. It is apparently generally agreed that adequate treatment consists of radical excision of the diseased bursa and trochanter. The same cardinal points have been brought out in the study of our series of cases.

We selected a series of nineteen cases of disease of the trochanter from a large group, the diagnosis of which was verified by operation, pathologic examination and, in five cases, guinea-pig inoculation. The patients were ten men and nine women. The average age at the time of admission was 35. The oldest patient was 65 and the youngest 21. In most cases the disease started in the late teens and early twenties. The youngest age at onset was 9 years and the oldest 44.

The occupations of the patients apparently had no bearing on the etiology of the condition. There were six housewives, two carpenters, two laborers, three farmers, four office workers and one minister. Five of the patients gave a definite history of trauma about the trochanter preceding the appearance of symptoms, and two had been exposed to tuberculosis in their homes. Previous illnesses also appeared to have no bearing on the condition. One patient had been given a previous definite diagnosis of pulmonary tuberculosis, one of tuberculosis of the knee and one of the ankle.

The complaints on admission were mostly of pain and draining sinuses. Eleven patients complained of pain in the hip, usually mild that did not interfere with their daily routine. Six patients had pain referred to the front of the thigh and one patient to the knee. The pain of four patients was aggravated by lying on the affected side, of two by walking, and of two by sitting, standing and wet weather. Three of the patients had tumor of the hip and one each had osteomyelitis, sciatica and a stiffness of the hip, besides the pain. Some patients had more than one complaint, thus accounting for a larger number of complaints than patients. The duration of the complaint averaged eleven and one-half years, the longest was forty years and the shortest five weeks. It is possible that in the latter instance the complaint really started some time before it was brought to the patient's attention, as the condition usually starts insidiously, and often the patient is not aware of it until it is considerably advanced. The right side was affected in fourteen of the cases and the left in five. This may be another point indicative of trauma as an exciting or contributing etiologic factor, since the right side is more com-

monly injured than the left, whether or not the patient recalls an injury. In some cases we are confident that the disease was present and that the injury directed the patient's attention to it, two of the patients had sustained an injury and in a few days, within a period too short for tuberculosis to develop, had noticed swelling over the trochanter. Thus, in the four cases in which the time between the injury and the onset of the complaint was recorded, the time interval in one case was ten days and in one eight weeks, in the other two cases the interval was ten months and nine years.

The patients usually appeared healthy and were ambulatory. They complained of soreness and swelling about the hip which had existed for some time. Most of them (ten) had been operated on previously, the operation consisting only of incision for drainage. One patient was operated on five times, one four times, one twice and seven once. None of the patients had local heat or redness at any time, an important point to be kept in mind in making a differential diagnosis of disorders in the region of the hip joint.

Inspection readily disclosed distinct swelling over or posterior to the greater trochanter (fig 1). Cold fluctuating masses of varying size were noted on palpation.

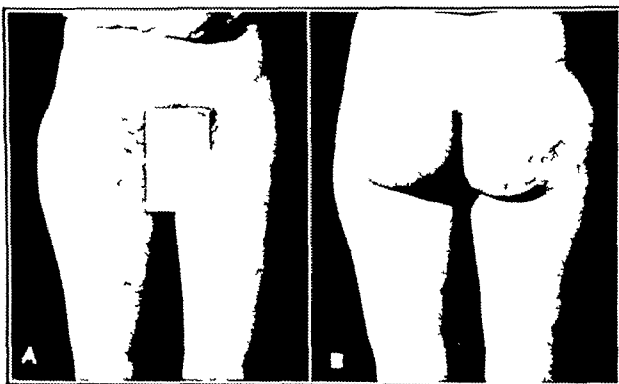


Fig 1—A, anterior view showing tuberculosis of the greater trochanter involving the bursa; B, posterior view showing bulging area over the trochanter from tuberculosis of the bursa.

of this area. Five of the ten patients previously operated on had discharging sinuses, usually of serous material. The skin appeared normal locally in all cases, unless redness and discoloration appeared from application of heat. Motions of the hip, as a rule, were free, and weight bearing was painless. Pressure over the affected area, on the other hand, caused soreness. It has been noted also that in changing position, as in rising from a sitting position, the patient was conscious of pain, owing to muscular pull and stress in the region of the disease. Five patients had a slight limp. Blood pressure was normal in all but two cases in which there was hypertension. The temperature was slightly elevated in only two cases, and in the remainder it was normal on admission to the Mayo Clinic. The hemoglobin was practically normal in all cases and the leukocyte count averaged 8,700, the lowest count was 4,400 and the highest 12,800. The urinalysis and the Wassermann reaction of the blood were negative in all cases. For purposes of comparison and because of the possibility of lumbosacral and sacro-iliac involvement, the roentgenographic examination in these cases included the entire pelvis and both trochanters. In this series the roentgenograms showed the trochanters to be involved on the affected side in fifteen cases (79 per

cent) There was an area of destruction along the outer margin of the trochanter, extending inward in varying distances to the femoral neck. The thickened bursa was sometimes apparent, when compared with the opposite side, and in some cases in which opaque material was injected the infected bursa became rather large. It has been our custom to take roentgenograms of the lungs in all cases of tuberculosis of the bones. In this series of cases the lungs were affected in eight (42 per cent), while in four (21 per cent) there was evidence of tuberculosis in other joints. In two cases (10.5 per cent) the urinary tract was affected. This large percentage of tuberculosis present elsewhere in the body and common injuries to the trochanters in falling and bruising during the active period of life readily demonstrates that injury to the bone may be an exciting or accessory factor in the production of tuberculosis in this region, secondary to a primary lesion in some other part of the body. In fifteen cases the roentgenograms disclosed positive evidence of involvement of bone, and this was confirmed by operation. In two other cases tuberculosis was found at operation to involve the trochanter when the roentgenograms apparently were negative. In two cases apparently the bursa only was involved, that is, no connection could be found leading to the trochanter. It is of interest that the wounds in these two cases healed by primary intention, whereas in cases in which the trochanter was definitely involved they healed slowly, or a sinus formed. The degree of involvement of the trochanter then may be looked on as an index to the difficulty in obtaining healing after operation.

The treatment of tuberculosis of trochanteric bursae and of the trochanter should be radical excision as soon as the diagnosis has been made. The type of operation preferred is total excision of the bursal sac and thorough curettement of the abscess in the bone, or excision of the involved portion of bone. Careful hemostasis and closure without drainage, and a compression pad and bandage all help to diminish the incidence of sinuses. In ten cases, because of the large size of the wound, we found it necessary to insert a small soft rubber drain to provide drainage of serum, which is bound to collect in such a cavity. The wounds were then sutured snugly with silk worm and non-absorbable dermal sutures. When the serous discharge had diminished the patient was exposed either to direct sunlight or to a sun lamp.

In this series of nineteen cases the focus was excised in seventeen, in one case the area was aspirated and material was obtained for study, and in one a discharging sinus was curetted. In only two cases were rice bodies found in the infected bursae. In two cases two operations were performed, and in six healing was by primary intention, in nine within a few weeks following the operation. Drainage persisted in four cases. Specimens of tissue taken at the time of operation proved to be tuberculous in all of the nineteen cases. In five cases in which guinea-pig inoculation was done, the results were all positive for tuberculosis.

As postoperative treatment, we have stressed the necessity of general upbuilding of the patient by proper diet, cod liver oil and heliotherapy, both local and general.

REPORT OF ILLUSTRATIVE CASES

CASE 1—A woman, aged 27, a school teacher, admitted to the Mayo Clinic Dec. 7, 1926 complained of a painful right hip and ankle. In 1918 she had had an attack of acute multiple arthritis and was in bed for eight months. She continued to have pain in the right ankle and hip. In 1922 the right ankle

had been operated on, and a diagnosis of tuberculosis was made. The exact nature of the operation was not known. Pain persisted and she wore a cast from the toes to the knee for one and a half years. In the meantime, a mass appeared over the lateral aspect of the upper third of the right thigh. This was operated on in June, 1923, the wound healed by first intention. Previous illnesses were unimportant and her family history was negative.

On examination the patient appeared to be fairly well developed but somewhat undernourished. A fluctuating mass was present over the right greater trochanter (fig. 1, A and B). There was free and painless motion of the hip. There was ankylosis of the right ankle, probably postoperative arthrodesis. The right leg was 2 cm. shorter than the left. Ankylosis of the right sacro-iliac joint also was present. The thorax and abdomen were normal. The systolic blood pressure was 120 and the diastolic 80 in millimeters of mercury, the temperature and pulse rates were normal at 4 p. m. Urinalysis was negative. The estimation of hemoglobin was 68 per cent, the leukocytes numbered 9,100. The Wassermann reaction of the blood was negative. Roentgenograms disclosed destructive arthritis of the right sacro-iliac and right ankle joints. The region of the right trochanter was reported normal on roentgenographic examination. A clinical diagnosis of tuberculous bursitis was made.

An exploratory operation was performed December 11, and an enlarged bursa was found in the region of the right greater trochanter. The bursa was filled with necrotic tissue coagulated fibrin and thin watery fluid. It was connected with other bursae between the gluteal muscles. A specimen was sent to a pathologist, who reported tuberculosis. The patient was dismissed from the hospital on the fourteenth day with the wound healed. She was advised to continue antituberculous treatment.

In January, 1927, the patient entered the hospital at her home because of a discharge from the wound. A letter received in May, 1928, stated that the wound was healed and that the ankle and hip were not giving her a great deal of trouble.

CASE 2—A farmer aged 44 admitted to the clinic, Dec. 26, 1922, complained of lumps over the right hip and thigh. Twenty-three years previously he had had some soreness and swelling in the region of the right greater trochanter. There was no local heat or redness, but pain was experienced when he tried to lie on the affected side. Apparently recovery from this attack was uneventful, and he had had no further trouble until about fifteen years previously when again swelling had appeared in the middle of the thigh posteriorly to the right. The swelling ruptured spontaneously and discharged a watery fluid, which contained white lumps like cottage cheese. The resulting sinus closed six months later and remained closed until the spring of 1922, when a lump appeared over the right greater trochanter. This was followed by the appearance of other swellings on the anterior and posterior surfaces of the thigh. Two weeks before he came to the clinic the swelling over the trochanter ruptured spontaneously and began to discharge. A diagnosis of a bone tumor was made. The patient had had dysentery and malaria in 1898. The family history was negative except that the father had died from nephritis.

The patient appeared to be well nourished. A sinus over the right greater trochanter was discharging. Motions of the hip were slightly restricted in all directions and there were fluctuating masses over the anterior and posterior surfaces of the middle of the thigh with no tenderness, local heat or redness. The right inguinal glands were enlarged. The heart and lungs were normal. The systolic blood pressure was 126 and the diastolic 74. The temperature was normal. The urine contained a trace of albumin. The leukocytes numbered 12,000 and estimation of hemoglobin was 77 per cent. The Wassermann reaction of the blood was negative. The tonsils were infected. Roentgenograms of the hip showed an erosion of the greater trochanter with some bony overgrowth and the roentgenologist made a diagnosis of tuberculosis (fig. 2). A clinical diagnosis of osteomyelitis of the right greater trochanter was made.

Aspiration and evacuation of the fluctuating mass was done Dec. 28, 1922. About 500 cc. of pus was aspirated from the largest abscess which was just above the greater trochanter. Jan. 10, 1923, the sinuses were again explored and two additional abscesses in the thigh were drained of broken down tuberculous material. The exact point of the origin of the sinus tract could not be determined although the finger could be inserted well up to the rim of the ilium. Five large iodoform packs were inserted

into the wound and were removed by the end of the ninth day. The patient was dismissed from observation, February 8, about one month following the operation. He had a serous discharge and was advised to take sun baths and so forth.

The pathologic examinations of secured tissue from the last operation disclosed inflammation. Culture of the material obtained at this time yielded negative results, and two guinea-pigs inoculated with the material were found to be tuberculous at necropsy.

A letter from the patient after he had returned to his home stated that the sinuses were all closed and that he was well.

CASE 3—A housewife, aged 31, came to the Mayo Clinic, Oct 26, 1926, because of a sinus and pain in the left thigh. She had been well apparently until 1918, when she began to have pain in the lateral aspect of the left thigh, with some tenderness. This trouble had continued until March, 1925, when a swelling appeared on the posterior aspect of the thigh just below the gluteal fold. The mass measured about 6 by 4 cm but gradually increased until, July, 1925, when it was incised by a local physician. The patient was in the hospital fourteen weeks with a Buck extension on this leg and then remained in bed at her home for six months. She said she had had fever every day. The sinus closed one week previous to her admission to the

bursa and bone, and then it ran anteriorly around the lesser trochanter downward and forward to the inner side of the femur. The tract, bursa and involved bone were completely excised. The wound was closed with two Penrose drains, which were removed in forty-eight hours. A pathologic diagnosis of tuberculosis was made. The patient was dismissed from the hospital on the sixteenth day with the wound healed by first intention. She has not been heard from since then.

CASE 4—A logger, aged 25, came to the clinic, Sept 19, 1929, because of osteomyelitis of the right hip. About three years previously he had been struck over the right hip by a log, considerable pain followed. A diagnosis of fracture was made at the time, and the hip was immobilized in a cast for about eight weeks but there was still some pain, and he limped. In February, 1927, the hip was operated on by his physician and a sequestrum removed. The operation was followed by a discharge from the wound. There was no history of tuberculosis in the family, and the patient had had no previous illnesses.

At examination there was a postoperative scar on the outer surface of the upper thigh, from a sinus which was discharging, and also a scar over the buttock. There was some limitation of motion at the hip, and roentgenograms gave evidence of old osteomyelitis of the greater trochanter of the right femur with



Fig 2—Tuberculosis of the greater trochanter of twenty three years duration



Fig 3—Tuberculosis of the left trochanter and bursa injected with Beck's paste



Fig 4—Tuberculosis of the right sacro iliac joint and right greater trochanter. There was a history of severe trauma in the region of the hip

clinic and this was followed by fever, nausea, headache and severe pain in the thigh. These symptoms were relieved after drainage had been established. The family history was negative, and the patient had had no previous diseases with the exception of influenza in 1925, appendectomy had been performed in 1911.

The patient appeared to be well developed and well nourished. There was tenderness over the left greater trochanter and a sinus in the left thigh just below the gluteal fold. A probe was passed into the sinus and from 12 to 14 cm toward the lesser trochanter. Motions of the hip were good and did not cause pain. Roentgenograms of the region of the hip were negative, however injection of the sinus with bismuth, October 20, disclosed a large sinus tract passing about the trochanter (fig 3). The thorax and abdomen appeared to be normal, although roentgenograms of the thorax disclosed evidence of an old healed lesion of apical tuberculosis on the left side. The systolic blood pressure was 120 and the diastolic 80, the temperature was normal and the pulse 88. The urinalysis was negative. The estimation of hemoglobin was 75 per cent and the leukocytes numbered 12,800. The Wassermann reaction of the blood was negative. A clinical diagnosis was made of tuberculosis of the bursa over the left greater trochanter and involving the greater trochanter.

November 1 exploration and excision of the sinus tract showed that the sinus tract ran from about 9 to 11 cm below the greater trochanter upward to it with involvement of the

multiple spicules of bone in the soft tissue and also destructive arthritis of the right sacro iliac joint (fig 4). The thorax and abdomen appeared to be normal. The systolic blood pressure was 120 and the diastolic 70, the temperature was 97 F at 1:20 p m, and the pulse rate was 88 a minute. The urine was normal except for an occasional pus cell. The estimation of hemoglobin was 92 per cent, and the Wassermann reaction of the blood was negative.

At operation, Sept. 23, 1929, the trochanter was chiseled off, the diseased tissue excised and the cavity packed with a strip of petrolatum gauze. On pathologic examination the specimen disclosed tuberculosis. September 30, daily treatments were begun of ultraviolet rays applied to the wound, together with infra-red. The patient was dismissed from the hospital, October 3, some discharge was still present. Continued treatment with ultraviolet rays had practically healed the wound by November 19, at which time he was dismissed from observation. Roentgenograms taken after the operation disclosed tuberculosis of the sacro-iliac joint, tuberculosis of the greater trochanter and loose bone particles, and overgrowth of bone at the margin of the acetabulum.

The patient reported by letter in August, 1931, that his leg was healed. In October 1932 he returned with swelling and a recurring sinus. The sinus was explored and curetted and a gauze pack inserted. General antituberculous measures, such

as heliotherapy, rest and cod liver oil, were advised for a prolonged period.

CASE 5—A woman clerk, aged 38, admitted to the clinic, April 8, 1930, complained of tight muscles and soreness about the right hip. A sister had died of tuberculosis twenty-five years previously, and her mother had died of carcinoma of the liver. The patient had had pneumonia at the age of 14 years and influenza at 26. The present trouble had started about fourteen years before her admission to the clinic with some soreness in the region of the right hip, which would last for



Fig 5—A extensive tuberculosis of the right greater trochanter of fourteen years duration. Involvement of the hip joint and loss of bone salts in the neck of the femur may be noted. B tuberculosis of the greater trochanter eleven months following operation. Involvement of hip joint may be noted.

one or two days. There were long intervals when she had no trouble. In October, 1928, she began to favor the right leg because of pain, this subsided and she had no more trouble until January, 1930, when the muscles of the thigh appeared to tighten as she walked. She could not lie on the right hip because of pain. At this time she started limping and she had used crutches for six weeks before her examination.

The patient appeared to be somewhat undernourished. There was no limitation of motion, although motion caused some pain in the right hip. There was some tenderness over the right greater trochanter. Roentgenograms gave evidence of extensive tuberculosis involving the greater trochanter and cystic formation; there was some atrophy of the neck of the femur and arthritis of the hip (fig 5 A). The systolic blood pressure was 140 and the diastolic 100, the temperature was 100 F at 10 a. m., and the pulse was 120. Rales were heard in the left upper lobe of the lung, roentgenograms disclosed tuberculosis of the left upper apex. The urine was normal. The estimation of hemoglobin was 59 per cent, and the leukocytes numbered 5,800. The Wassermann reaction of the blood was negative. A clinical diagnosis of tuberculosis of the right greater trochanter was made.

Operation was performed April 15. The cavity in the greater trochanter was explored and found to be filled with cheesy, broken down material. There was no free pus. Specimens were sent for guinea-pig inoculation and for pathologic examination. The cavity was swabbed with iodine and alcohol and the wound closed without drainage. The pathologist found degenerated tissue of an amyloid nature. The guinea-pig died; the test was positive for tuberculosis. Convalescence was uneventful, and, April 26, eleven days after operation, the wound was healed and the stitches were removed. A cast was applied from the thorax to the knee on the right side. The patient was dismissed from observation, May 2, and advised to take heliotherapy and cod liver oil and to use crutches.

The patient returned in July, as she had been instructed and the cast was removed. Roentgenograms disclosed improvement in the appearance of the neck of the femur and marked filling in of the bone in the cavity. She got along well until December 1 when she stumbled and fell. The right knee became swollen and painful and an abscess developed in the incision six weeks before she returned to the clinic, March 30, 1931. At this time she was recovering from influenza and had two draining sinuses. There was a good deal of limitation of motion of the right hip. Roentgenograms disclosed destructive arthritis of the hip. The patient was advised to go to a sanatorium for

treatment of tuberculosis of the lungs, and for complete of the hip (fig 5 B).

The patient died, Sept. 6, 1932, seventeen years after onset of her complaint.

CASE 6—A housewife, aged 44, came to the clinic, Jan. 1932, because of a draining sinus over the greater trochanter of the right femur of eight months' duration. At the age of 14 years she had received a blow on the right thigh above the knee, an abscess resulted, which was incised and drained. It healed easily, although she limped on the leg for many years. Later she received another blow, which was followed by fever and a discharging sinus in the thigh. She was given tuberculin by her physician and the wound continued to discharge for one year. Since that time four operations had been performed, and each time the trouble extended. When she was admitted to the clinic a discharging sinus was still present. She complained of weakness in the affected leg and constant soreness in the thigh. The family history was negative.

Examination disclosed numerous scars on the outer surface of the thigh with a small draining sinus below the trochanter. There was some limitation of motion at the hip. The heart and lungs were normal. The systolic blood pressure was 140 and the diastolic 90, the temperature was 98 F. The urinalysis was negative except for pus graded 4. Erythrocytes and leukocytes were normal and the Wassermann reaction of the blood was negative. Roentgenograms disclosed some destruction of the greater trochanter with a few small fragments of bone in the periarticular structures.

January 6 the sinus tract was excised. The tract led down to a large, old chronically inflamed sac, which was attached to the trochanter. This was dissected to the bone, where it was removed to its attachment over the trochanter. The whole sac, which was hard and sclerotic, was taken out. A diagnosis of tuberculosis was made by the pathologist (fig 6). Two small sequestrums that were in the fibrous tissue about the trochanter were removed. A rubber tube was inserted, the wound was



Fig 6 (case 6)—Tubercles seen in tissue removed at the time of operation.

loosely sutured and a gauze dressing saturated with alcohol was applied and covered with a cotton pad. The drain was removed in twenty-four hours. The wound healed by first intention. The patient now reports that the wound is in good condition and that she is taking heliotherapy.

SUMMARY

A study was made of nineteen patients with tuberculosis of the greater trochanter and the trochanteric bursa beneath the gluteus maximus, verified by opera-

tion, pathologic examination and, in five cases, guinea-pig inoculation

Evidence of tuberculous disease in other parts of the body was found in 73 per cent of the cases, 42 per cent of which was in the lungs and 31 per cent in other parts of the body

The symptoms were usually local and consisted of a cold, fluctuating swelling, local tenderness and, seldom, impairment of motion of the joints

Roentgenograms showed involvement of the trochanter in 78 per cent of the cases

The treatment advocated was early radical excision of the involved area, followed by adequate antituberculosis measures, such as rest, proper diet, cod liver oil, and heliotherapy, with special stress on the last mentioned

The prognosis is good with prolonged careful general treatment. Without treatment, sinuses form and spread infection into the neck of the femur and hip joint

ABSTRACT OF DISCUSSION

DR. FREDERICK C. KIDNER, Detroit. This thorough paper calls attention to a rare condition and to the importance of diagnosis. I have had only three cases of tuberculosis of the greater trochanter or its bursa. Two of the cases were in children about 12 to 13 years of age, and in both a wrong diagnosis was made. In one case the diagnosis was that of osteitis fibrosa cystica and in the other the diagnosis was of a cyst with a peculiar inflammatory reaction around the outer wall. Operation was performed in both cases, which proved to be tuberculous. Attempts at excision were made and were successful in that they relieved the symptoms, but both patients had persistent sinuses. The third case, that of an elderly man, made me doubt whether this disease originates in the bone. The man was 60 years of age and had a large tumor over the trochanter. This was fluctuant and the diagnosis was obscure. The roentgenogram showed a little erosion of the trochanter itself. Operation disclosed a large sac in which there were typical tuberculous masses. Any connection with the trochanter itself was very difficult to find. The changes as one examined the trochanter at the time of operation were those of pressure rather than of disease. The bone was dense and hard but smooth. In that case an effort was made to excise completely but was not successful, with the result that secondary infection set in and the man died after some months of the secondary infection. These few cases lead me to believe that the complete removal of tuberculosis of the trochanter and its bursa is not an easy operation but still I believe that the attempt at such removal is the proper treatment.

DR. C. A. STONE, St. Louis. Tuberculosis of the trochanter is not quite as rare as some think. A number of these cases have been seen at the Washington University Dispensary in St. Louis. I want to stress one or two things. In practically all I have found the disease present elsewhere. I believe that trauma has considerable to do with it. It is difficult to eradicate the disease in the trochanter just as it is difficult to eradicate it elsewhere. It is worth while to pay attention to this disease. For several years past the best of living conditions existed in the country; the cities require that all their milk should be pasteurized; a great deal has been done in the testing of cattle for tuberculosis and bone tuberculosis has decreased considerably. I want to make it distinct that at this time living conditions have changed; a great many children are undernourished and physicians must be on the lookout again for bone tuberculosis with the natural increase in the number of cases that take place in the greater trochanter.

DR. ARTHUR STEINDLER, Iowa City. I wish to mention the work of Dr. Milgram who has collected records of twenty or twenty-one cases of chronic inflammation of the gluteal bursa, about half of which were tuberculous. One case had been treated for scrofula for about thirty years. So far as I know, all those cases have been relieved by the complete radical

excision of the bursa, as Drs. Meyerding and Mroz have recommended, and I know of one case that has been under observation for several years. It is our impression that the primary tuberculosis of the gluteal bursa, is, if anything, more important than the primary tuberculosis of the trochanter in extension on the bursa.

DR. HENRY W. MEYERDING, Rochester, Minn. I thought this series was worth reporting because of the scarcity of literature on the subject and because these patients were all operated on and the material removed from the site proved to be tuberculous. I wrote Dr. Z. B. Adams to find out what his experience had been. He writes as follows: "I have had just your experience with the gluteal bursa which surrounds the trochanter and the tuberculous bursae, which we have opened and cleaned out, and have succeeded for a time in getting them healed up so that it seemed as if the disease was cured. However, these cases have a way of recurring in the bony trochanter itself several years later, and these cases of tuberculosis of the greater trochanter we have treated by cutting out the Brody's abscess or the tuberculous bone, as far as we could, and packing them with grease, a la Orr. These have healed up and gone on quite satisfactorily in some cases, although in some other instances, even when the removal of the whole trochanter has been necessary in order to get rid of the infected bone so far as possible the disease has slowly spread up the neck and then involved the hip joint." All our patients were mature. We feel that no matter whether one operates or not, general anti-tuberculosis measures are really the important factors in obtaining a cure.

Clinical Notes, Suggestions and New Instruments

STATUS EPILEPTICUS TREATED BY MAGNESIUM SULPHATE INJECTED INTRAVENOUSLY

FREDERIC STORCHHEIM, M.D., WAUWATOSA, WIS.

Status epilepticus, while not very commonly seen, is one of the gravest symptom pictures encountered by physicians. According to Wechsler,¹ it "generally ends fatally." The great majority of true status attacks, when the patient is unconscious and has epileptiform attacks, between which he does not regain consciousness, with the convulsions coming on with a half hour down to a few minutes or even several seconds between, terminate in death. When the physician reaches the stricken patient the latter is usually flat on his back in deep coma, breathing stertorously, with copious white froth escaping from his mouth and often from his nostrils. The face may be pale or deeply cyanotic and the entire body wringing wet from perspiration. The pulse is often extremely rapid, especially in the later stage, and of varying quality, and the respiratory rate is usually somewhat increased. The breathing is handicapped by the large quantity of fluid in the air passages and in the lungs themselves. The signs of pulmonary edema are very obvious in these victims.

The medication advised for these patients in the standard textbooks is morphine, with atropine chloral, ether or chloroform anesthesia. In my experience they have been entirely inadequate. All my patients, five in number, with true status, who were treated thus, died. The cases all had a common characteristic: a frothy emanation from the mouth with the stertorous breathing signifying pulmonary edema. There was a terminal rise of temperature to 104 or 105 F. in four of these cases. The pulmonary edema with the consequent or accompanying heart failure, was largely responsible for the fatal termination. Therapy, in order to be successful, must apparently attack this phase.

Instead of the older treatments mentioned which had proved to be of no value whatever, intravenous medication with magnesium sulphate was given for the treatment of status epilepticus thereafter. Eight patients have been treated so far, among whom three patients have had two attacks from which

From the Milwaukee County Asylum for Chronic Insane.
¹ Wechsler, L. S. A Textbook of Clinical Neurology, Philadelphia W. B. Saunders Company 1932 p. 616

they recovered, and one patient has had four attacks and is still alive. So far, no case of status, treated thus, has terminated fatally. It is believed that all these cases would have ended fatally similarly to the first series, if intervention had not been undertaken or if they had been treated along the same lines. The relief obtained was, however, purely symptomatic, as several of the patients have had status attacks again after the recovery from the first attack. In all instances, the relief from the signs of pulmonary edema was very striking.

It was noticed further that in more than half the cases there was an interval after an attack of status, during which the patient was free from convulsions much longer than ordinarily.

In two instances the dose of 10 cc. of 25 per cent magnesium sulphate was decidedly inadequate. It was found safe and advisable to repeat the injection a third time, although more than that would have been, according to the work of Stander, very dangerous.

COMMENT

Lennox and Cobb³ state that all observers are agreed that during the seizure itself [epileptic seizure] spinal fluid pressure is greatly increased. Weed and McKibben⁴ demonstrated on animals that cerebrospinal fluid pressure and brain bulk may be varied by hypertonic and hypotonic salt solution. Peterman, in discussing convulsions in children, points out the significance of cerebral edema in epilepsy and advises the use of hypertonic solutions. Thus, the intravenous use of magnesium sulphate appears to be logical and rests on a sound physiologic basis.

Search of the *Quarterly Cumulative Index Medicus* as far back as 1917 does not reveal a report of the intravenous use of this drug in the treatment of status. Sodium amytal is widely used intravenously for this purpose, but it has the disadvantage that the patient sleeps for many hours afterward, and bronchopneumonia is to be reckoned with. My patients usually awakened within twenty minutes after an adequate dose had been given, from a condition which is known to be usually fatal, just as spectacularly as a patient in diabetic coma can be aroused by an adequate dose of insulin.

It is interesting to note the parallelism of thought in the medical treatment of eclampsia and status epilepticus. For both conditions, morphine, chloral or ether anesthesia and the like were recommended. In 1926, McNeile and Vruwink⁶ described the intravenous use of magnesium sulphate solution in the care and treatment of preeclampsia and eclampsia. They say "We frankly believe that we can usually depend on intravenous medication to prevent and control convulsions. During the convulsive state of a toxemia of pregnancy the intravenous injection of 20 cc. of a 10 per cent solution of magnesium sulphate will generally stop or at least limit the number of convulsions." Perhaps it would not be surprising to find that the underlying pathologic changes of the central nervous system are analogous, if not identical, in status epilepticus and in eclampsia. The results of treatment of status by the intravenous use of magnesium sulphate are at least as favorable as in eclampsia. Possibly the influence of this substance on the edema of the lungs, as well as on the brain, may play an important if not the decisive role.

It is well known that magnesium sulphate given intravenously, must be given with caution, but the limits of safety, up to which magnesium sulphate may be injected intravenously, have apparently been well worked out. Fischer⁷ states that the salt may be safely used in a 2 to 25 per cent solution up to 8 Gm. Stander² has found on the basis of animal experimentation that, given in a 10 per cent solution 0.1 Gm. per kilogram of magnesium sulphate intravenously represents a safe dose. Thus up to 7 or 8 Gm. would represent the upper limit of safety.

CONCLUSIONS

- 1 True status epilepticus is ordinarily fatal unless adequately treated.
- 2 Magnesium sulphate solution given intravenously, if administered in adequate doses, apparently terminates an attack of status successfully and thus acts as a life saver.
- 3 An injection of 10 cc. of a 25 per cent solution of magnesium sulphate is apparently a safe dose to give and terminates most attacks of status. If necessary, it may be repeated and possibly given a third time in a well developed individual. More is dangerous.
- 4 The trend of treatment of true status epilepticus has been very much like the medical treatment of eclampsia.
- 5 Pulmonary edema when occurring in status, is apparently successfully coped with by intravenous injection of magnesium sulphate.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

AMINOPHYLLINE—Aminophyllin—A double salt or mixture of theophylline, $C_7H_8(CH_3)_2ON_2H_2O$, and ethylene diamine, $C_2H_4(NH_2)_2$, containing not less than 70 per cent of anhydrous theophylline (calculated to the dried specimen).

Actions and Uses—Aminophylline has the actions and uses of theophylline and theophylline-sodio acetate, over which it has the advantage of greater solubility. Like these it has a diuretic action, produces myocardial stimulation, and occasionally may be useful in relieving the pain of coronary disease.

Dosage—Orally, from 0.1 to 0.2 Gm., by rectal administration in the form of suppositories, 0.36 Gm., or, as a retention enema from 0.3 to 0.4 Gm. dissolved in water, intramuscularly, 0.48 Gm., intravenously, in emergencies only, 0.24 Gm.

Aminophylline occurs as white or slightly yellowish granules possessing a slight ammoniacal odor and a bitter taste, soluble in water about 1 part in 5 parts at 25°C. Insoluble in alcohol and ether. An aqueous solution is distinctly alkaline to litmus paper. On exposure to air it gradually absorbs carbon dioxide with the liberation of theophylline.

Dissolve about 0.5 Gm. of aminophylline in 25 cc. of distilled water previously boiled to remove carbon dioxide, add with constant stirring 1 cc. of diluted hydrochloric acid, collect the precipitate of theophylline on a filter paper, wash with cold water, dry at 100°C. It melts at from 267 to 272°C. Place about 0.01 Gm. of the resultant precipitate in a porcelain dish, add 1 cc. of hydrochloric acid and 0.1 Gm. of potassium chlorate, evaporate the mixture to dryness on a water bath, on inverting the dish over ammonia the residue assumes a purple color, readily destroyed by fixed alkalis. To the filtrate from the foregoing add 2 cc. of benzoyl chloride, followed by the addition of 5 cc. of sodium hydroxide solution, agitate the mixture and heat gently for a short time and allow to cool, collect the precipitate of ethylenediamine dibenzoate on a filter paper, wash with water and dry at 100°C, it melts at 244°C.

Incinerate about 1 Gm. of aminophylline accurately weighed, the residue does not exceed 0.1 per cent. Dry about 1 Gm. of aminophylline accurately weighed in a desiccator over calcium chloride for forty-eight hours, the loss does not exceed 4.5 per cent. Transfer about 0.2 Gm. of aminophylline, accurately weighed to a 500 cc. Kjeldahl flask and determine the nitrogen content according to the Gunning method described in Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, edition 3, 1930, page 20, chapter 2, paragraph 22, the percentage of nitrogen corresponds to not less than 32.2 per cent nor more than 33 per cent, calculated to the dried substance. Transfer about 0.15 Gm. of aminophylline to a 100 cc. volumetric flask, containing 5 Gm. of sodium chloride and 10 cc. of 20 per cent hydrochloric acid, followed by the addition of 50 cc. of tenth normal iodine solution, finally dilute with water to the final volume of 100 cc. and allow to stand for thirty minutes, shaking at intervals, filter through paper, rejecting the first 20 cc. of the filtrate, and measure accurately 50 cc. of the filtrate into an Erlenmeyer flask, add titrate the excess of iodine with tenth normal sodium thiosulphate solution using starch paste as an indicator, the amount of iodine consumed multiplied by two and the conversion factor (0.004503 Gm.) represents the amount of theophylline present in the specimen, the percentage of theophylline found by this method should not be less than 70 per cent nor more than 83 per cent, calculated to the dried substance.

NOTE—No satisfactory method for accurate determination of theophylline in theophylline-ethylenediamine has been found. The assay by the periodide method is only roughly approximate, it is important that as nearly exactly the specified amount of aminophylline as possible be used with iodine because the solubility of the periodide precipitate varies. This assay method of standardization is therefore at best approximate and must be considered tentative until such time as more accurate analytic procedure is available.

² Stander, H. J., Effect of Intravenous Administration of Magnesium Sulphate, *J. A. M. A.* 92: 631 (Feb. 23) 1929.

³ Lennox, W. G. and Cobb, Stanley, Monograph on Epilepsy, Cambridge, Mass., Harvard University Press, 1929.

⁴ Weed, I. H. and McKibben, P. S., Pressure Changes in Spinal Fluid by Injection of Solutions of Various Concentrations, *Am. J. Physiol.* 48: 512-531 (May) 1919.

⁵ Peterman, M. G., Convulsions in Childhood, *J. A. M. A.* 99: 546 (Aug. 13) 1932.

⁶ McNeile, L. G. and Vruwink, John, Magnesium Sulphate Intravenously in the Care and Treatment of Preeclampsia and Eclampsia, *J. A. M. A.* 87: 237 (July 24) 1926.

⁷ Fischer, M. H., Classification and Treatment of the Nephritides, *Detroit M. J.* 16: 1 1916.

Aminophylline-Pharmedic—A brand of aminophylline-N N R

Manufactured by the Pharmedic Corporation Brooklyn N Y No U S patent or trademark

*Ampules Solution Aminophylline Pharmedic 0.24 Gm 10 cc**Ampules Solution Aminophylline Pharmedic 0.48 Gm 2 cc**Suppositories Aminophylline Pharmedic 0.36 Gm**Tablets Aminophylline Pharmedic 0.1 Gm***Aminophylline-Searle**—A brand of aminophylline-N N R
Manufactured by G D Searle & Co Chicago No U S patent or trademark*Ampules Solution Aminophylline Searle 0.24 Gm 10 cc* Each ampule contains aminophylline Searle 0.24 Gm benzyl alcohol 0.24 Gm in sufficient distilled water to make 10 cc*Ampules Solution Aminophylline Searle 0.48 Gm 2 cc* Each ampule contains aminophylline Searle 0.48 Gm benzyl alcohol 0.04 Gm in sufficient distilled water to make 2 cc*Tablets Aminophylline Searle 0.1 Gm (1½ grains)***Metaphyllin**—A brand of aminophylline-N N R

Manufactured by the Byk Guldenwerke Chemische Fabrik Berlin Germany (Adolphe Hurst & Co New York N Y distributor) U S patent 919 161 (April 20 1909 expired) U S trademark 252 503

*Ampules Solution Metaphyllin 0.24 Gm 10 cc**Ampules Solution Metaphyllin 0.48 Gm 2 cc**Suppositories Metaphyllin 0.36 Gm* Each suppository contains metaphyllin 0.36 Gm in a cacao butter base*Tablets Metaphyllin 0.1 Gm***CHLORIODIZED RAPESEED OIL**—A Halogenated Rapeseed Oil—A halogenated addition product of rapeseed oil containing from 24 to 26 per cent iodine and from 7 to 8 per cent chlorine in organic combination**Actions and Uses**—In the form of an emulsion, chloriodized rapeseed oil is used as a roentgenographic opaque medium in urography**Dosage**—The amount of emulsion to be used is determined by the size of the cavity to be visualized Intravenous and intraspinal injections are contraindicated

Manufactured by the Dermatological Research Laboratories branch of the Abbott Laboratories North Chicago Ill U S patent 1870 023 (Aug 2 1932 expires 1949)

Ampules Camptodol Emulsion 20 cc Chloriodized rapeseed oil 5 cc acacia solution (35 per cent) 5 cc and distilled water 10 cc

Chloriodized rapeseed oil is a yellow semiviscous oil having an alliacious odor and an oleaginous taste soluble in benzene carbon disulphide chloroform and ether insoluble in alcohol and water On exposure to air and sunlight it decomposes turning a brown color Specific gravity at 20 C from 1.2 to 1.3

Boil about 0.5 cc of chloriodized rapeseed oil and 20 cc of half normal potassium hydroxide alcoholic solution in a porcelain dish for about ten minutes evaporate the liquid on a water bath and ignite the residue Dissolve the residue in 10 cc of water filter the solution add 5 cc of nitric acid and 2 cc of silver nitrate solution to the filtrate collect the precipitate consisting of a mixture of silver chloride and iodide on a filter wash with diluted nitric acid and water percolate the precipitate obtained with 10 cc of diluted ammonium hydroxide several times a white curdy precipitate results on the addition of an excess of diluted nitric acid Mix 10 cc of chloriodized rapeseed oil with 50 cc of purified petroleum benzine a transparent liquid results

Dissolve about 1 cc of chloriodized rapeseed oil in 10 cc of chloroform add a few drops of phenolphthalein solution and 0.3 cc of tenth normal sodium hydroxide solution the liquid becomes red (limit of acidity) Shake 1 cc of chloriodized rapeseed oil with 50 cc of wetted filter the filtrate yields no more than a slight opalescence with 1 cc of diluted nitric acid and 1 cc of silver nitrate solution (soluble inorganic halides)

Ignite about 1 Gm of chloriodized rapeseed oil accurately weighed the residue does not exceed 0.01 per cent Transfer about 0.3 Gm of chloriodized rapeseed oil accurately weighed to a bomb tube determine chlorine and iodine contents by the modified Carus method Collect the insoluble residue of silver halide on a filter paper wash thoroughly with diluted nitric acid and water puncture the filter wash the insoluble material into a 250 cc glass stoppered Erlenmeyer flask using about 100 cc of previously filtered stronger ammonium hydroxide stopper the flask shake the flask and contents and allow to stand for one hour Collect the insoluble residue of silver iodide on a tared Gooch crucible wash with diluted ammonium hydroxide and water and dry to constant weight at 100 C the amount of iodine found is not less than 24 per cent nor more than 26 per cent To the ammoniacal filtrate from the iodine determination add 25 cc of potassium iodide solution and remove the ammonia by heating on a water bath collect the insoluble residue of silver iodide on a tared Gooch crucible wash with water and dry to constant weight at 100 C the amount of silver iodide found calculated as chlorine is not less than 7 per cent nor more than 8 per cent

BENZEDRINE—Racemic deoxy-nor ephedrine—Racemic benzyl methyl carbinamine—A synthetically prepared racemic mixture of bases having the formula $C_9H_{11}CH_2CH_2NH_2Cl$ **Action and Uses**—Benzedrine produces local effects similar to those of ephedrine Local application by means of a spray or dropper of a 1 per cent solution in liquid petrolatum or inhalation of the vapors of benzedrine or its carbonate produces shrinking of the nasal mucosa in head colds sinusitis vasomotor rhinitis hay fever and asthma Both benzedrine and its carbonate (the latter readily forms on exposure of benzedrine to air) are volatile**Dosage**—As a spray, a 1 per cent solution in liquid petrolatum, as an inhalant, one or two inhalations through each nostril at hourly intervals, has been recommended Continued overdosage should be guarded against, as this has caused restlessness and sleeplessness, but no serious reactions have been observed

Manufactured by Smith Kline & French Laboratories Philadelphia Pa U S patent 1 921 424 (Aug 8 1933 expires 1950) U S trade mark 272 377

Benzedrine Inhaler Each inhaler tube contains at the time of packing benzedrine 0.325 Gm oil of lavender 0.097 Gm and menthol 0.032 Gm*Benzedrine Solution* Benzedrine 1 per cent oil of lavender 0.33 per cent in liquid petrolatum

Benzedrine occurs as a colorless mobile liquid boiling at 200-203 C with slight decomposition The specific gravity at 25 C is 0.931 The vapor pressure at ordinary temperature is relatively high and the substance possesses a strong basic odor and a burning taste It is soluble in ether and alcohol and slightly soluble in water

Place 1 Gm of benzedrine in an Erlenmeyer flask, add 50 cc of water and 5 cc of 40 per cent sodium hydroxide solution then add benzoyl chloride 0.5 cc at a time shake the flask after each addition add the benzoyl chloride until no more precipitate forms after an addition Recrystallize twice from 50 per cent alcohol solution dry the crystals the melting point is 134-135 C The nitrogen content of the benzoate by the micro Dumas method is not less than 5.70 nor more than 5.93 per cent

Transfer 0.5 Gm of benzedrine accurately weighed to a tared weighing bottle and place on the steam bath for one hour The residue is not more than 0.5 per cent (non-volatile compounds) Dissolve 1 cc of benzedrine in 10 cc of liquid petrolatum U S P (anhydrous) no turbidity is produced (water)

Suspend about 1 Gm of benzedrine accurately weighed in 10 cc of water and titrate with half normal sulphuric acid using methyl red as an indicator the acid used corresponds to not less than 95 per cent nor more than 100 per cent of the base (1 cc half normal sulphuric acid is equivalent to 0.0675 Gm of base)

Determine carbon hydrogen and nitrogen by micro combustion methods The carbon should be not less than 79.7 nor more than 80.3 per cent the hydrogen not less than 9.6 nor more than 9.9 per cent and the nitrogen, not less than 10.2 nor more than 10.6 per cent

Benzedrine Inhaler

Transfer the cotton filling to a Kjeldahl distillation flask, add 250 cc of water and 1 Gm of sodium hydroxide distil 150 cc into 20 cc of tenth normal sulphuric acid titrate the excess acid with tenth normal sodium hydroxide solution the base is equivalent to not less than 0.305 Gm nor more than 0.360 Gm per tube

Transfer the solution from the titration to a separatory funnel extract with 30 cc of ether transfer the ether extract to an Erlenmeyer flask add 2 cc of 40 per cent sodium hydroxide solution and 0.5 cc of benzoyl chloride and shake the flask and contents for ten minutes set aside for two hours add 0.5 cc of benzoyl chloride shake the flask and contents for ten minutes set aside at the end of two hours add 0.5 cc of benzoyl chloride shake the flask for ten minutes allow to stand on the steam bath until the odor of benzoyl chloride has disappeared remove the precipitate by filtration wash with cold water dry at 90 C the melting point is 130-135 C

Benzedrine Solution

Transfer an accurately weighed sample of benzedrine solution weighing about 15 Gm to a Kjeldahl distillation flask add 5 Gm of tale 250 cc of water and 1 Gm of sodium hydroxide distil 150 cc into 20 cc of tenth normal sulphuric acid titrate the excess acid with tenth normal sodium hydroxide solution the base is equivalent to not less than 0.95 per cent nor more than 1.05 per cent

Transfer the foregoing solution to a separatory funnel and proceed to determine the melting point of benzedrine benzoate as outlined under Benzedrine Inhaler

ALLERGENIC EXTRACTS-LEDERLE (See New and Nonofficial Remedies, 1933, p 27)

The following product marketed in dilutions representing respectively, 0.0005 mg 0.005 mg and 0.1 mg of nitrogen per cubic centimeter, has been accepted

Fish Glue Allergenic Extract Lederle

The product marked 10 is prepared by boiling the heads of any common fish for one hour in acidified distilled water, for example 40 pounds of fish heads in 30 liters of water with 45 cc of glacial acetic acid The resulting extract is filtered while hot through cloth yielding 25 liters of fluid of pH 5.0 The extract is evaporated on a steam bath to 2 liters of thick residue representing the stock material from which simple saline dilutions are made

DIPHTHERIA IMMUNITY TEST (SCHICK TEST)
(See New and Nonofficial Remedies 1933, p 398)

Hixon Laboratories Inc Johnstown, Ohio

Diphtheria Toxin for the Schick Test (Diluted)—A diphtheria toxin prepared by growing diphtheria bacilli in broth aging and diluting with a solution containing sodium borate 0.36 per cent boric acid 0.53 per cent and sodium chloride 0.61 per cent The diluted toxin is of such strength that 0.1 cc (one dose) given intracutaneously constitutes one fifth minimum lethal dose for a guinea pig of 250 Gm weight The product as marketed is ready for use no diluent being required Merithiolate 1:10 000 is used as preservative Marketed in packages containing sufficient material for 10 25 and 50 tests**STAPHYLOCOCCUS VACCINE** (See New and Nonofficial Remedies 1933 p 390)

The Grillo Laboratories Inc Marietta Pa

Staphylococcus Vaccine (Albus and Aureus) (See New and Nonofficial Remedies 1933 p 390)—Also marketed in packages of one 5 cc vial containing 2 000 million killed bacteria per cubic centimeter

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
RAYMOND HERTWIG Secretary

CONTAMINATION OF FRUITS AND VEGETABLES WITH TOXIC INSECTICIDE SPRAY MATERIAL

Fruits and vegetables are frequently sprayed with highly toxic material for destruction of insects or fungus. Residues of these sprays may remain on the foods as distributed for consumption or for use in preparation of canned or other prepared forms of fruits and vegetables and endanger public health.

Distributors of fruits and vegetables that may bear toxic spray material are obligated to remove such poisonous contaminations before they enter commerce for retailing to the public, or to warn food manufacturers who will use the products for preparation of manufactured foods of the possible presence of the spray residue. Food manufacturers using fruits and vegetables should take proper precautions either to assure the absence of toxic spray contaminations or their removal before the products are prepared or packed for consumption.

Food articles, in the interest of public welfare shall bear or contain no toxic contaminations that may endanger health. Fresh fruits and vegetables likely to have been sprayed should be carefully washed with adequate water or special solvent solutions before use. Washing, however, does not assure removal of all spray materials. Distributors of fresh fruits and vegetables and manufacturers of foods containing these products bear a serious responsibility to the public that their products as presented for consumption are entirely wholesome, carelessness or disregard of this public health responsibility is criminal.

REPORTING OF VIOLATIONS OF REQUIREMENTS FOR ACCEPTED FOODS

Physicians, sponsors of accepted foods, or others are urged to notify the office of the Committee of violations of the Committee's Rules and Regulations and General Committee Decisions for accepted foods. This cooperation will materially aid the Committee in its public welfare and health work in the field of foods. Submitted advertising violating requirements will be given prompt attention whether the sender identifies himself or not.

MINERAL SPRING, NATURAL OR ALKALINE WATERS

Mineral, spring, natural or alkaline waters are usually advertised with unwarranted claims as to their health values. These waters are often alleged to possess curative and medicinal properties.

Analyses of most of these waters do not disclose explanations or evidence for remarkable curative properties. In case of potable mineral waters their mineral content comprises traces only of commonly occurring salts present in substantially greater quantities in ordinary foods. In many cases the deceptive therapeutic claims are the result of hearsay and illusion, or of deliberate scheming to defraud. Mineral waters having therapeutic action, generally cathartic, usually contain salts such as sodium phosphate or magnesium sulphate. Such therapeutically active mineral waters come under the purview of the Council on Pharmacy and Chemistry.

Formerly, therapeutic properties were attributed to mineral waters containing lithium or possessing radioactivity. Such characteristics as radioactivity or the presence of lithium in drinking water have not been shown to have useful effects. Strongly radioactive waters may be distinctly harmful. Natural waters contain only traces of lithium. The fortification of waters with lithium salts has no rational foundation, larger doses of lithium may be dangerous.

Spring waters of low mineral content are not to be distinguished physiologically from ordinary potable tap or drinking

water, their properties for meeting the water needs of the body are the same. Drinking water should be pleasing to the taste and free from contamination that may produce disease. Therapeutic or curative claims for mineral waters that are not laxative are to be viewed with suspicion.

The daily water requirements for health cannot be defined with any degree of exactness as activity, temperature and other conditions influence the demands. Sufficient water should be taken with meals and between meals to satisfy thirst. Glutting the body with water is not justified. Under disease conditions the physician should prescribe the water intake.

Good bottled waters of uniform composition, of tested purity and freedom from pathogenic contamination at the source and protected from possible contamination during transit to the consumer have special usefulness, they serve as refreshing, pleasing drinking water with a maximum safety assurance and merit the support of popular and professional advertising appropriate for pure potable water.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

GERBER'S STRAINED STRINGLESS GREEN BEANS

Manufacturer—Gerber Products Company, Fremont, Mich.

Description—Strained cooked stringless green beans retain in high degree the natural vitamin and mineral values. The coarser fibrous material is removed. No added seasoning or sugar.

Manufacture—Stringless green beans grown from selected seed under company supervision are harvested at the proper state of maturity, promptly washed, inspected, cooked, sieved, canned and processed as described under Gerber's Strained Vegetable Soup (THE JOURNAL, July 22, 1933, p. 282).

Analysis (submitted by manufacturer) —

	per cent
Moisture	93.2
Total solids	6.8
Ash	0.4
Fat (ether extract)	0.1
Protein (N X 6.25)	1.3
Reducing sugars before inversion (as invert)	1.5
Sucrose (copper reduction method)	0.2
Starch (acid hydrolysis method)	0.9
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	4.2

Calories—0.2 per gram 6 per ounce

Vitamins Minerals and Claims of Manufacturer—See Strained Vegetable Soup (THE JOURNAL, July 22, 1933, p. 282).

SUNBONNET FLOUR (BLEACHED) LASSIE FLOUR (BLEACHED)

Manufacturer—Federal Mill Inc., Lockport, N. Y.

Description—Bagged hard winter wheat 'standard patent' flour bleached.

Manufacture—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-eleventh ounce per 196 pounds).

Claims of Manufacturer—For bread baking.

VALUE BRAND EVAPORATED MILK

Packer and Distributor—John F. Jelke Company, Hillsboro, Wis.

Description—Unsweetened sterilized evaporated milk. The same as Jelke Good Luck Evaporated Milk (THE JOURNAL, July 29, 1933, p. 367).

**McCORMICK'S BEE BRAND RED PEPPER
(CAYENNE)****McCORMICK'S BEE BRAND WHOLE RED PEPPER
(JAPAN CHILLIES)****McCORMICK'S BEE BRAND CRUSHED RED
PEPPER (ITALIAN STYLE)***Manufacturer*—McCormick and Company, Inc. Baltimore*Description*—Whole red pepper (Japan chillies) and ground red pepper (Cayenne) (dried ripe fruit of *Capsicum frutescens* L. or *C. baccatum* L.)*Manufacture*—The peppers are harvested, spread out in the sun to dry for two weeks, exported in bags and packed in cartons and tins at the packing plant*Analysis* (submitted by manufacturer) —

	per cent
Moisture	6.1
Total ash	6.3
Acid insoluble ash	0.7
Volatile ether extract	0.6
Nonvolatile ether extract	15.4
Protein (N \times 6.25)	13.4
Starch	1.1
Crude fiber	23.1
Carbohydrates other than crude fiber (by difference)	35.1

Claims of Manufacturer—Conforms to the respective United States Department of Agriculture standards**RYE BRACKLE WAFERS***Manufacturer*—Paul Schulze Biscuit Company, Chicago*Description*—Rye wafers seasoned with salt*Manufacture*—Rye grain with a portion of the endosperm removed and salt are mixed with water and are whipped into a fluffy dough. The dough is rolled into thin bands baked cut into small wafers, dried on trays to a moisture content of from 3 to 4 per cent, and packed in wax-paper wrapped cartons*Analysis* (submitted by manufacturer) —

	per cent
Moisture	7.0
Ash	3.2
Fat (ether extraction method)	2.0
Protein (N \times 5.62)	10.5
Reducing sugars as dextrose	1.1
Sucrose	5.6
Crude fiber	1.8
Carbohydrates other than crude fiber (by difference)	75.3

Calories—3.6 per gram 102 per ounce*Claims of Manufacturer*—Provides roughage as an aid to relieve constipation due to insufficient bulk in the diet**INL BAKERS FLOUR (BLEACHED)**

(MALTED WHEAT FLOUR ADDED)

Manufacturer—Saxony Mills, St. Louis*Description*—Hard winter wheat patent flour containing added malted wheat flour (0.104 per cent), bleached*Manufacture*—Hard winter wheat is cleaned scoured tempered and milled by essentially the same procedures as described in THE JOURNAL June 18 1932 page 2210 Chosen flour streams are blended admixed with malted wheat flour (0.104 per cent), bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour)*Analysis* (submitted by manufacturer) —

	per cent
Moisture	12.9
Ash	0.46
Reducing sugars as maltose	1.1

Calories—1.5 per gram 99 per ounce*Claims of Manufacturer*—For commercial bread bakeries, added malted wheat flour increases the fermentation tolerance**WONDER LOAF***Manufacturer*—Bismarck Baking Company Bismarck N. D.*Description*—A white bread made by the sponge dough method (method described in THE JOURNAL March 5 1932 p. 517) prepared from patent flour water sweetened condensed skimmed milk a hydrolyzed starch hard salt yeast malt extract sucrose and a yeast food containing calcium sulphate ammonium chloride sodium chloride and potassium bromate.**DOLE HAWAIIAN FINEST QUALITY PINE-
APPLE JUICE (UNSWEETENED)
DOLE BRAND***Packer*—Hawaiian Pineapple Company, Ltd, San Francisco*Description*—Hawaiian pineapple juice retaining in high degree the natural vitamin content of the raw pineapple. The same as Dole Hawaiian Finest Quality Pineapple Juice (Unsweetered) (THE JOURNAL, June 3, 1933, p. 1769)**MERITA BREAD (SLICED)***Manufacturer*—American Bakeries Company, Atlanta, Ga.*Description*—A white bread made by the straight dough method (method described in THE JOURNAL, March 12, 1932, p. 889), prepared from flour, water, sucrose, shortening, powdered skim milk, salt, invert sugar, yeast, malt syrup, and less than 0.14 per cent by weight of a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate**LUCKY SWASTIKA BREAD FLOUR (BLEACHED)
BLUE RIBBON BREAD FLOUR (BLEACHED)
MOHAWK BREAD FLOUR (BLEACHED)***Manufacturer*—Federal Mill, Inc., Lockport, N. Y.*Description*—Northwestern spring wheat and hard winter wheat patent flour, bleached*Manufacture*—Selected spring and hard winter wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-fourteenth ounce per 196 pounds) and with nitrogen oxide*Claims of Manufacturer*—For bread baking**PLEE-ZING PURE TOMATO JUICE***Manufacturer*—Loudon Packing Company, Terre Haute, Ind.*Distributor*—Plee-Zing, Inc., Chicago, successor to the George H. Simmons Corporation, St. Louis*Description*—Pasteurized tomato juice with a small amount of added salt, retains in high degree the vitamin content of tomatoes. The same as Loudon Brand Tomato Juice (THE JOURNAL, June 25, 1932, p. 2289)**BLACK BIRD BRAND CRYSTAL TABLE SYRUP**

(CORN SYRUP FLAVORED WITH ROCK CANDY SYRUP)

Packer—Wheeler-Barnes Company, Minneapolis*Distributor*—H. P. Lau Company, Lincoln and Fremont, Neb.*Description*—Table syrup, corn syrup base (85 per cent) with rock candy syrup (15 per cent), the same as White Oak Brand Crystal White Syrup (THE JOURNAL, Oct. 15, 1932, p. 1353)**McCORMICK'S BEE BRAND CLOVES***Manufacturer*—McCormick and Company, Inc., Baltimore*Description*—Ground cloves (dried flower buds of *Caryophyllus aromaticus* L.)*Manufacture*—Flower buds of a dull red color of *Caryophyllus aromaticus* L. are dried on mats for from six to eight days during which time from 50 to 60 per cent loss in weight occurs. They are exported to the company's packing plant, cleaned, ground and packed in tins*Analysis* (submitted by manufacturer) —

	per cent
Moisture	7.9
Total ash	6.5
Acid insoluble ash	0.4
Nonvolatile ether extract	6.6
Volatile ether extract	18.6
Protein (N \times 6.25)	11.9
Crude fiber	8.9
Carbohydrates other than crude fiber (by difference)	39.6

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SATURDAY, OCTOBER 21, 1933

MALNUTRITION IN CHILDREN

The Secretary of Labor, through the Children's Bureau, called a conference in Washington, October 6, to consider what the Children's Bureau appears to regard as a significant increase in malnutrition directly attributable to the current depression. Representatives of official and voluntary health and relief agencies and of the medical profession and allied workers were invited to this conference. Prior to the conference a meeting of a selected executive committee had been held, and considerable publicity had been given to the opinion of the Children's Bureau that increase of malnutrition among children constitutes a serious menace at this time. The title Child Health Recovery, applied to the program proposed by the Children's Bureau, implies notable deterioration in child health during the years of economic stress.

The report of the executive committee, as presented to the conference, stated that the objective of the conference is to locate undernourishment, to initiate plans to overcome existing conditions of malnutrition and to prevent its further occurrence by dietary and medical procedures. Cooperation is to be asked of state and local departments of health, education and welfare, of state and local relief administrations, and of state and local medical and dental societies. All these are to be asked to coordinate themselves under state, county and local committees. The program is to include consideration of families not on relief as well as those receiving relief. The term child is to cover the period from infancy through adolescence. The Children's Bureau is to prepare a record blank to insure uniformity of recording. Examinations are to be made of large groups of children. These examinations and the subsequent treatment of the undernourished are to be paid for out of federal relief funds.

The report of the executive committee was supported by the presentation of statistics from New York City, Massachusetts rural regions, a Philadelphia relief group, and Denver social agencies. A number of speakers, including the federal relief administrator,

supported the contention that the nation faces a significant increase in malnutrition among children. However, a number of experienced public health workers, among them an officer of the federal government, pointed out that objective standards on which a diagnosis of malnutrition can be based are not available and emphasized that statistical evidence in current morbidity and mortality rates does not indicate any widespread emergency, though conditions in certain localities are admittedly deplorable. Warnings were issued on the floor of the conference against attempting to sell the country a famine program, against a national hysteria, and against wasting money on medical examinations when undernourished children, so far as they can be identified in the light of existing knowledge, are already known to physicians, nurses and social workers, in a word, against making a hullabaloo. Doubt was expressed as to the wisdom of superimposing a complex new organization on competent local workers and thus meddling with local agencies. It was pointed out that the expense involved in the examination program would go far toward providing adequate food for all children on relief. It was also pointed out that some malnutrition is always present, that undernourishment is not confined to the poor, that this problem was not born in 1929, and that its consideration at this conference was merely another symptom of dumping on the national table at this time of practically every instance of individual need.

In the end, approval of the report of the executive committee was moved. A question from the floor raised the point as to whether this report, if adopted, was to be considered binding on state and local groups, and the chair replied that its adoption would put it in the status of a recommendation. The report was adopted by *viva voce* vote.

Thus the federal government seems to be sponsoring a so-called child health recovery program in the face of an opinion expressed by a representative of one of its important bureaus to the effect that no unusual emergency has been shown to exist, as well as other opinions that there is no evidence of child health deterioration. Therefore, by implication, the title Child Health Recovery is a misnomer. Men and women whose genuine interest in child health cannot be questioned and whose experience and ability entitles them to an opinion have expressed their conviction that the wholesale examination of children in the absence of any objective criteria for malnutrition would be a waste of time and money and would give only a mass of unreliable statistical data. Fortunately, the plan is now in the hands of the states, and the medical and dental professions will have a voice in state and local programs. At least two state medical societies, Pennsylvania and New Jersey, have developed programs for child health conservation in their respective states, both projects antedating that now proposed by the Children's Bureau. Their experience should offer suggestions and guidance.

to other state committees. It is to be hoped that all local committees, in outlining their plans for safeguarding child health, will heed the voices of those who point out the disadvantages of the proposed program as well as those who support the proposed plan. Deterioration of child health must not be permitted to occur, but pessimism and hysteria should not be allowed to undermine what appears to be a revival of confidence.

THE ANTISCORBUTIC POTENCY OF CERTAIN FOODS

The conquest of scurvy, a disease of mankind that has a recognized history of several hundred years, illustrates in almost dramatic fashion what modern science has accomplished for human welfare in general and for the practice of medicine in particular. When James Lind, surgeon in the British navy, published his classic on scurvy nearly two hundred years ago, it became clear that the malady was due to a lack of fresh food as distinguished from stale or preserved foods, such as sea biscuit, salt meats and dried vegetables. When Lind's treatise appeared it served, in the words of Hess,¹ to crystallize the conception of scurvy, which had been stretched out of all proportions to include an ever increasing conglomeration of clinical conditions. Scurvy had become the alpha and omega of professional routine, the catchword of the day, the asylum ignorantiae of the practical man. Into this chaos, as Hirsch expresses it, "the first beams of light fell when Lind's classic work appeared."

About twenty years ago, thanks to the elucidating contributions of animal experimentation, it was clearly shown that scurvy is caused by the lack of a dietary essential that presently became classed as a vitamin with the specific designation of vitamin C. The ability to make progress in subsequent years is attributable chiefly to the fact that certain animal species, notably guinea-pigs, are susceptible to a series of scorbutic symptoms almost exactly analogous to those of man. The possibility of producing experimental scurvy at will made it easy to study antiscorbutic measures. The enthusiasm for such prophylactic undertakings was heightened when the susceptibility of the bottle-fed infant to scurvy was clearly demonstrated. This happened after the pasteurization of milk began to become common as a means of safeguarding health against certain milk-borne diseases. Today the use of an antiscorbutic in the diet of artificially fed infants has become almost universal.

The most recent phase of the study of scurvy includes the brilliant demonstration that vitamin C, the antiscorbutic food factor, is a well defined organic chemical entity comparatively simple in nature. Its synthesis in the laboratory may actually be accomplished at any moment for several chemists are "hot on the trail" of

the six carbon ascorbic acid $C_6H_8O_6$, endowed with the virtue of preventing the pathologic changes in organs and tissues exhibited when vitamin C is not adequately supplied along with the other essentials of the human dietary. The chemical identification of the vitamin has been accompanied by efforts at chemical assay instead of the more laborious biologic measurement of potency. Thus, several minutes' scientific study in the chemist's laboratory is destined to supply, with reasonable accuracy, information about foods that has in the past required several weeks of patient observation on animals. Recently, for example, British biochemists² have made estimates of the ascorbic acid content—that is, the amount of vitamin C—in a considerable number of food materials and have compared the results with those obtained by biologic assays. The outcome is of practical interest in showing anew that cow's milk is incomparably poorer in ascorbic acid than are the familiar current antiscorbutics. For example, whereas the ascorbic acid content of milk varies from 0.019 to 0.025 mg per gram, the citrus fruit juices approximate from 0.50 to 0.75 mg. This means that it may require from 1 to 2 ounces of fresh cow's milk to afford the antiscorbutic protection inherent in less than 2 cc (less than half a teaspoonful) of orange or lemon juice. Even at its best, therefore, a milk diet calls for supplementation with an effective antiscorbutic. The choice is no longer limited as it was in the days when the North American Indians taught the explorer Jacques Cartier how to save the lives of his men with extracts of "pine needles."

Current Comment

GASTRIC ACHYLIA AND ANEMIA

It seems increasingly clearer, from the more recent studies on anemia, that some of the manifestations of this multiform disorder must be associated with more than one etiologic factor. Among the aspects that present themselves from this point of view, perhaps the most interesting and clinically important are the indications that the stomach may have a definite and significant connection with pernicious anemia. As stated recently,¹ the occurrence of achlorhydria in pernicious anemia, the supervention of the disease in man following gastrectomy, the marked therapeutic effects of products of gastric digestion and of preparations of gastric tissue are convincing evidence of the existence of this relationship. That achlorhydria is frequently associated with an anemia secondary in type is also attracting considerable interest. One outcome of the situation has been a growing number of investigations in which possible interrelations of gastric achylia and various types of anemias have been

2 Birch, T. W., Harris, L. J. and Ray, S. N. A Microchemical Method for Determining the Hexuronic Acid (Vitamin C) Content of Foods. *Biochem. J.* **27**: 590, 1933.

1 Muller, R. B. Drage, C. A. and Bradlee, J. D. Hemoglobin Regeneration in Gastricomized Dogs. *Am. J. Physiol.* **107**: 443 (Aug.) 1933.

examined For example, some time ago Ivy, Morgan and Farrell² observed the occasional development of a spontaneous anemia in gastrectomized dogs and in dogs with a pouch of the entire stomach They reported an increased tendency to anemia in gastrectomized female dogs that became pregnant Thus they postulated as indicating that the gastrectomy had reduced the factor of safety in the dog and that the additional strain of pregnancy was sufficient to produce an anemia In work done in the same laboratories, at the Northwestern University Medical School in Chicago, hemoglobin production and the qualitative changes in the blood picture were determined in gastrectomized dogs maintained at an anemic level after measured hemorrhages¹ Evidently in the complete absence of the stomach there is a much reduced capacity to regenerate hemoglobin after hemorrhage Liver feeding or administration of liver extract, which is so effective in pernicious anemia, offers no hematopoietic advantages in uncomplicated gastric achylia Furthermore, the induced anemias fail even after long periods to exhibit the characteristic histologic pictures of the pernicious type Mullen³, Dragstedt and Bradley⁴ have reached the conclusion either that the failure of the gastrectomized dog to develop pernicious anemia indicates that he is biologically different from man in this respect or that in man, as well as in the dog, achylia or gastrectomy, as the case may be, is only one of several interrelated factors in the etiology of this disease That the gastrectomized dog has a markedly reduced hemoglobin regenerating capacity would seem to favor the latter view In harmony with this they add, are the clinical observations that neither achylia nor gastrectomy in man is invariably followed by pernicious anemia

THE EFFECTS OF CERTAIN FRUITS ON URINARY ACIDITY

Few fruits are good sources of energy in nutrition, and still fewer are important as sources of protein The high recommendation of fruits as components of a well selected dietary must therefore be based on other considerations The textbooks on dietetics see the significance of the fruits in their mineral constituents and their unique vitamin content It has also been known for some time that, despite the presence of a considerable variety of organic acids in fruits, including formic, citric, malic, benzoic and succinic acid, many of them function as potential alkalis in the body The fact that the acid citrus fruits could actually give rise to an alkaline urine seemed hard to comprehend at first The organic acids are, however, burned in the organism, and the residual "ash" is alkaline in character The property of preserving the "neutrality" of the body fluids has been invoked often to the point of charlatanism in promoting the use of certain fruits to combat so-called acidosis Indeed, Henderson¹ has severely criticized some of the current misconceptions of the term itself Not all organic acids are readily burned in the metabolism

Benzoic acid notably remains intact when ingested in any form, it is excreted, conjugated with glycine, as hippuric acid through the kidneys Tartaric acid also is not readily destroyed in the human organism Each edible fruit really needs to be tested in the crucible of the body For the citrus fruits and many others the facts have long been known² A new study by Saywell³ from the Fruit Products Laboratory of the University of California at Berkeley brings conclusive evidence for the potential alkalinity of pears, peaches and apricots They increase the alkalinity of the urine, decrease the output of urinary ammonia, and increase the alkali reserve of the blood These are criteria of the potential alkalinity of a food Significant, too, is the observation that about 95 per cent of the organic acids of the fruits studied was actually oxidized in the body

THE ANALGESIC EFFECT OF JAUNDICE

After four years of observation, Hench⁴ has issued a report which justifies the inclusion of another clinical phenomenon in the list of the accepted but only partially understood general bodily effects of jaundice He has encountered a number of patients the pain of whose primary condition was largely, and usually completely, relieved when jaundice appeared The main interest of this observation is not in diseases of the liver but in such painful conditions as arthritis, fibrositis and sciatica In some of the cases observed, the pain disappeared under the influence of icterus, although the patients had not taken any drug Nor was the relief of pain in the accepted cases attributable to any of the many factors which may abruptly cause cessation of activity of chronic rheumatic disease rest in bed, pregnancy, acute infection, an unrelated major operation, arsphenamine, heightened basal metabolic rate, vaso motor effects of surgical anesthesia, postoperative fever, or diet Jaundice of the intrahepatic type, not obstructive jaundice, seemed to be the significant factor Apparently there was usually a direct relationship between the degree of analgesia and the concentration of serum bilirubin In some cases, however, the relief from pain preceded the appearance of an icteric tinge in the peripheral tissues Further explanation of the mechanism involved must await further investigation, although there is some ground for believing that icterus may have a local sedative action on inflamed tissue or that it may be depressant to the nervous system Likewise, the obvious therapeutic implications are as yet insufficiently founded to warrant dosing with bile salts for pain of any description, as Hench is careful to point out The time may come when it may be possible "to repeat nature's miracle to provide at will a similar beneficence by the use of some nontoxic accompaniment of jaundice, effective in available concentration"

² Ivy, A. C., Morgan, J. E. and Farrell, J. I. *Surg. Gynec. & Obst.* 53: 611 (Nov.) 1931
¹ Henderson, Landell. *Fundamentals of Asphyxia* J. A. M. A. 101: 261 (July 22) 1933

² Blatherwick, N. R. The Specific Role of Foods in Relation to the Composition of the Urine. *Arch. Int. Med.* 14: 409 (Sept.) 1914
Blatherwick, N. R. and Long, M. Louisa. *J. Biol. Chem.* 53: 103 (July) 1922
Saywell, L. G. *J. Nutrition* 5: 103 (March) 1932
Saywell, L. G. and Lane, E. W. *ibid.* 6: 263 (May) 1933
³ Saywell, L. G. Effect of Pears, Peaches, Apricots and Dried Sulphured Apricots on Urinary Acidity. *J. Nutrition* 6: 397 (July) 1933
⁴ Hench, P. S. Analgesia Accompanying Hepatitis and Jaundice in Cases of Chronic Arthritis, Fibrositis and Sciatic Pain. *Proc. Staff Meet. Mayo Clin.* 8: 430 (July 12) 1933

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8 55 to 9 o'clock, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters)

The subjects for the week are as follows

October 24 When a Child Chokes
October 26 Shopping for Milk

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

October 28 What Is New in Infant Feeding

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

ALABAMA

Fifty Years for Slaying a Physician—Eugene J Burns, convicted of second degree murder several months ago for the slaying of Dr William H Godwin, Thomas, was sentenced to fifty years in the state penitentiary, September 18, newspapers report. A motion for a new trial was denied. In his first trial Burns was convicted of second degree murder and sentenced to twenty-five years' imprisonment. Dr Godwin died in 1931 from gunshot wounds, received when he answered a call to a vacant house

Promotions at Alabama University—Recent promotions on the faculty of the University of Alabama School of Medicine include the following, newspapers announced

Emmett B Carmichael, Ph D, head of the department of physiologic chemistry to full professor

Dr Franklin S DuBois to professor of anatomy and head of the department

James O Foley, Ph D to associate professor of neuro anatomy

Thomas E Hunt, Ph D to associate professor of histology and embryology

Dr Gene H Kistler to associate professor of physiology and pharmacology

Marie C D Amour, Ph D to assistant professor of physiology and pharmacology

ARIZONA

Basic Science Law in Effect—The voters of Arizona, in a referendum election, October 3, approved the basic science act passed at the last regular session of the state legislature, and signed by the governor, March 18. Cult opponents of the act, principally chiropractors and naturopaths relying on a provision of the state constitution maneuvered a referendum on the measure, thus forcing it to lie inoperative pending the outcome of the election. Nonsectarian and osteopathic applicants for licenses in Arizona are examined and licensed by the board of medical examiners, but chiropractors are examined by the board of chiropractic examiners. Heretofore each board has been the sole judge of the credentials of applicants applying to it for licenses. But under the basic science act until after the basic science board is satisfied that an applicant demonstrates a comprehensive knowledge of the basic sciences neither licensing board can examine him. The basic sciences as defined by the act consist of gross anatomy, physiology, pathology, chemistry, bacteriology and hygiene. Persons now licensed to practice the healing art must obtain certificates from the basic science board if they desire to continue in practice but they may obtain certificates without examination if they apply to the board before January 1 and pay a fee of \$5. If any present licensee neglects to obtain a certificate by January 1 he must pass an examination in the basic sciences to obtain one. The basic science act makes it specifically the duty of every police officer, sheriff and peace officer to investigate all supposed violations of it and to report the facts to the proper prosecuting authorities and requires the attorney general and the several county attorneys to prosecute all violations

CALIFORNIA

Rabies—Rabies in animals has increased in California, according to the bulletin of the state health department, September 23. Out of a total of sixty-six cases reported in August, forty-nine occurred in Los Angeles County. Other counties reporting cases were Contra Costa, Kings, Sacramento, San Diego, San Joaquin, Sonoma and Stanislaus.

Symposium on Heart Disease—The heart committee of the San Francisco County Medical Society will hold its fourth annual graduate course on heart disease, November 22-23. No fee will be charged. Sessions will be held at the San Francisco, University of California and Stanford University hospitals, and at the new headquarters of the department of public health.

Mussel Quarantine Extended—The California Department of Health has extended the quarantine on mussels to October 30, because cases of mussel poisoning continue to be reported. The quarantined area has also been extended to cover the entire coastal region from Monterey County to the Oregon line, excluding the bay of San Francisco. The sale or offering for sale of mussels is prohibited by the quarantine regulations.

Health Officers Elect—Dr Herbert F True, health officer of Sacramento, was elected president of the Health Officers' Section of the League of California Municipalities at the annual meeting in Santa Cruz September 18-20. Speakers before the section and the league included Dr George G Reinle, Oakland, president, California Medical Association, on "The Medical Profession and the Public Health", Nina S Estill, San Francisco, "The Calcium and Phosphorus Problem and the Average Diet", Dr Ray Lyman Wilbur, "The Place of the Health Department in City Government," and Karl F Meyer, Ph D, San Francisco, "Acute Health Problems Which Affect California."

CONNECTICUT

The Summer Round-Up—More than 70 per cent of the 3363 children examined during the summer round-up season, October, 1932-July 1, 1933, had physical and dental defects many of which were considered serious enough to be referred to their family physicians and dentists for correction, according to the Connecticut *Health Bulletin*. Seventy-seven per cent of all children registered by local committees attended the round-ups for complete examination, and at 31 of the 178 round-ups all the children registered were examined. These round-ups are sponsored by parent-teacher associations and the bureau of child hygiene of the state department of health.

FLORIDA

Society News—Dr William C Blake, Tampa, presented a paper on coronary thrombosis before a joint meeting of the Sarasota and Manatee county medical societies recently, in Sarasota. A motion picture on "Living Tumor Growth Cells" was shown before the Orange County Medical Society, August 16.

Immunization Clinics for Negro Children—A series of clinics to immunize Negro children against typhoid, diphtheria and smallpox has been opened by the Tampa health department under the direction of Dr James R McEachern, health officer. It is hoped that during the three months for which the clinics have been planned, at least 3,000 children will be treated.

Department of Public Health Created—Announcement is made of the creation of a department of public health in Miami, which began functioning, September 15. Formerly all matters pertaining to health were administered under the department of public welfare through the division of health. Dr George A MacDonell will be director of public health. He was chief of the division of health for three years prior to his resignation in 1929. Dr John W Shuster resigned as head of the department of public welfare, effective August 15, to resume private practice.

ILLINOIS

Society News—Dr Leonard F Weber, Chicago spoke before the DuPage County Medical Society September 20 on dermatology. The St. Clair County Medical Society was addressed in Belleville, October 4 by Dr Millard F Arbuckle, St. Louis, on "Bronchoscopic Diagnosis of Pulmonary Disease," and in East St. Louis, October 5, by Dr Louis C Boslimere, St. Louis. "Silicosis and Silicotuberculosis"—Dr Ralph Pemberton, Philadelphia, addressed a joint meeting of the fifth

councilor district of the Illinois State Medical Society and the Sangamon County Medical Society, October 5, on the control of rheumatism—At a meeting of the Williamson County Medical Society in Marion October 3, among others, Dr Frank J Jurka, state health officer, Springfield, discussed epidemic encephalitis—Dr Charles P Emerson, Indianapolis, spoke, among others, before the Vermilion County Medical Society, October 3 on "Lessons from Medicine of the Orient"—Dr John A Wolfer, Chicago spoke on "Surgical Management of the Jaundiced Patient" before the Peoria City Medical Society, October 3

Faculty Presents Program—Members of the staff of St Louis University School of Medicine presented a program before the Adams County Medical Society in Quincy, October 9, as follows

Dr Cyrus E Burford Nephropepy and Ureterolysis as Conservative Surgery
Dr William T Coughlin Injuries to the Brain
Dr Ralph A Kinsella Encephalitis
Dr William E Leighton Evolution of Spinal Cord Surgery
Dr LeRoy Sante Radiation in the Treatment of Malignant Disease
Dr August A Werner The Sex Hormones

Alphonse M Schwistalla, S.J., Ph.D., dean of the school made an address at the banquet on the report of the Committee on the Costs of Medical Care

Chicago

Dr Jackson to Address Public Meeting—Dr Chevalier Jackson professor of bronchoscopy and esophagoscopy, Temple University School of Medicine, Philadelphia will address the Chicago Medical Society, November 1, at a meeting open to the public on "Bronchiectatic Septic Tank and Its Prophylaxis" This talk will be discussed by Drs Samuel J Perleman and Carl A Hedblom Dr Jackson will also speak at a reception and dinner to be held in his honor in the dining room of the Medical Arts Club before the meeting His subject will be "Is It Advisable to Treat Post-Tuberculous Cicatricial Stenosis of the Larynx?" The dinner meeting is being sponsored by the medical society and its Aux Plaines branch with the Chicago Laryngological and Otological and Chicago Tuberculosis societies

Changes at Loyola University—With the opening of the autumn quarter, the following promotions on the faculty of Loyola University School of Medicine were announced

Drs Walter R Bayard Jerome W Hayden John C Vermeren Francis A Dulak and Burton T Gordon clinical associates in ear nose and throat
Dr Howard C Riordan clinical instructor in ear nose and throat
Drs Patrick H McNulty and Peter A Nelson Jr clinical instructors in genito-urinary surgery
Drs Jacob S Grove and Carl J Uthoff clinical associates in genito-urinary surgery
Dr Robert J Hawkins, clinical associate in obstetrics
Dr William M Hanrhan associate clinical professor of obstetrics
Drs Edward H Warszewski and Martin G Luken clinical professors of surgery
Dr Joseph T Meyer assistant clinical professor of surgery
Dr Lester E Garrison clinical associate in surgery
Drs Edward B Kalvelage Anthony J Linowicki and John P Woitalewicz assistant clinical professors of surgery
Dr John B O Donoghue clinical professor of surgery

Transfers included those of Dr Leo J Latz from the department of neuropsychiatry to the department of medicine as instructor, and Dr John G Powers from the department of anatomy to the department of medicine as assistant New appointments were announced in THE JOURNAL, June 24, page 2024

Society News—The Chicago Society of Allergy was addressed October 16, by Drs Isadore Pilot and Isidor Harrison Tumpeon on "Focal Infection and Allergy" and "Hyperergic Response of Allergic Children to Infection," respectively—At a meeting of the Chicago Ophthalmological Society, October 16, Drs Agnes Beulah Cushman and Samuel I Meyer presented reviews of the 1932 literature on trachoma, tuberculosis, retinal detachment and intra-ocular tumors, and glaucoma respectively—The McDonagh Society for Clinical Research was addressed, October 20, by Drs Paul G Pomeroy, Ottawa, and Kamil Schulhof on "Treatment of Polyarthritides" and "An Alleged Mechanical Detector of Disease," respectively—The Chicago Gynecological Society was addressed at its fifty-sixth annual meeting October 20, by Gordon J Lang, Ph.D., on "The Medicine Man" and Dr William F Petersen "Meteorological Associations of Disease"—Dr Charles H Mayo, Rochester Minn., among others addressed the Chicago Association of Commerce, October 11, on "Good Health Essential for Sustained Recovery"—A clinic was conducted before the Endocrine Club of Chicago at the Elgin State Hospital, Elgin August 16 by Dr James H Hutton, Chicago and Drs Charles F Read, David L Steinberg and John T Nerancy, Elgin

MARYLAND

Semiannual Meeting of Medical Faculty—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Point Lookout, October 22-23 with Dr Robert V Palmer, Avenue, presiding Speakers at the general meeting include Drs Frederick D Chapple, Hughesville, president Southern Maryland Medical Society, Alexius McGlannan, Baltimore, Walter D Wise, and Hon J Allen Coad, who will speak on "The Relation of the Medical Society to the General Assembly" The scientific program includes the following

Dr Albert E Goldstein A Study of Patients of the Prostatic Hypertrophy Age
Dr Herbert Schoenrich Consideration of the Venereal Diseases in Medical Practice
Dr Frederic W Heitler Peroral Endoscopy—Its Practical Application in Diagnosis and Treatment
Dr Jay Martin Effect of Nonspecific Desensitization in the Treatment of Disease
Dr Francis J Kirby Foreign Bodies in the Elbow Joint

MASSACHUSETTS

Changes at Tufts—Dr Benjamin Spector has been promoted to the head of the department of anatomy at Tufts College Medical School, Boston, newspapers announce Other changes include the appointment of Dr Attilio Canzanelli as assistant professor of physiology, Dr Max Ritvo as assistant professor in radiology, and Dr Harold A Chamberlin as professor of urology

Society News—Drs Arthur W Allen and Benjamin H Ragle Boston discussed pitfalls in surgical and medical diagnosis respectively, before the Essex North District Medical Society, October 18 at Andover Dr William H Robey, Boston president of the state medical society, also spoke—At a meeting of the Greater Boston Medical Society, October 3 Dr Moses Paulson Baltimore spoke on "Present Status of Idiopathic (Chronic Nonspecific) Ulcerative Colitis"—Dr Howard M Clute Boston spoke on the diagnosis and treatment of obstructive jaundice before the Franklin District Medical Society, Greenfield, September 12

MICHIGAN

Society News—Tumors of the ovaries was the subject discussed at the meeting of the Michigan State Pathological Society, October 4, in Detroit—Dr Loren W Shaffer, Detroit addressed the Saginaw County Medical Society, September 19, on the modern treatment of syphilis—Dr Bruce H Douglas Northville was elected president of the Michigan Tuberculosis Association, September 20, succeeding Dr Henry D Chadwick, who recently became health commissioner of Massachusetts Dr Douglas was appointed to succeed Dr Chadwick as controller of the tuberculosis division of the Detroit health department

MINNESOTA

County Society Opposes Rezoning—At a meeting, September 18, the City Council of St Paul considered a petition to rezone the property at Hamline and Capitol avenues to enable "certain people to operate what would have been known as the Hamline Clinic and Hospital" Senator George L Siegel, representing the petitioners, stated that he was appearing for one Mr J J Hicks, who is interested in the sale of "Terpezone" machines for the treatment of tuberculosis and other respiratory ailments The rezoning was opposed by counsel for the Ramsey County Medical Society, the state board of medical examiners and the Ramsey County Public Health Association When it became evident that the council was not in favor of the proposition Mr Hicks withdrew his petition The Minnesota State Board of Medical Examiners believes that the use of "Terpezone" to treat patients with tuberculosis or any other ailment constitutes the practice of healing and as such, if used at all can be used only by one licensed to practice medicine and healing in the state The Council on Pharmacy and Chemistry of the American Medical Association found Terpezone unacceptable for inclusion in 'New and Nonofficial Remedies'

MISSISSIPPI

Society News—Speakers before the Delta Medical Society at Belzoni, October 11 included Drs James A Wadlington, Belzoni and Andrew M Wynne, Merigold on "Glandular Therapy in the Treatment of Functional Menstrual Disorders" and Atebrin and Plasmochin in the Treatment of Malaria," respectively—Among others, Dr William A Land DeKalb, addressed the East Mississippi Medical Society, Philadelphia,

recently, on angina pectoris—Dr Joseph A Crisler, Jr, Memphis, among others, spoke before the Northeast Mississippi Thirteen Counties Medical Society in Calhoun City, September 19, on "The Decision for Surgery in Borderline Hypertension."—At a meeting of the South Mississippi Medical Society in Laurel, September 14, the speakers included Dr Shirley C Lyons, New Orleans, on "Treatment of Varicose Veins and Varicose Ulcers by the Injection of Sclerosing Solutions."

MISSOURI

Symposium on Encephalitis—Epidemic encephalitis was the theme of a symposium held at a special meeting of the St Louis Medical Society, September 1. Dr William G Patton discussed the recent epidemic and the Metropolitan Health Council, Dr Paul J Zentay, historical review, Dr Joseph F Bredeck, epidemiology, and Dr Howard A McCordock, pathology. The clinical features were discussed by Drs John W Eschenbrenner, Jr, Lee Pettit Gay, Goronwy O Broun and Andrew B Jones, Dr Ralph S Muckenfuss spoke on research and etiology. These presentations were discussed by Drs James P Leake and Charles Armstrong of the U S Public Health Service, William D Collier, Hollis N Allen, Theodore C Hempelmann, Arthur H Deppe and Walter A Younge.

Society News—Speakers before the Buchanan County Medical Society in St Joseph, September 6, included Drs Daniel G Stine, Columbia, on neurasthenia, Elmer T McGaugh, state health officer, differential diagnosis of encephalitis, and James P Leake of the U S Public Health Service, encephalitis.—At a meeting of the Cass County Medical Society, September 14, Drs Basil O Hartwell, Drexel, and George W Griffith, Garden City, among others, spoke on tularemia and spinal cord tumors respectively.—Dr Leith H Slocumb, St Louis, discussed the treatment of hemorrhoids before the Gasconade-Marion-Osage County Medical Society at Owensville, recently, and Dr Paul C Schnoebelen, St Louis, diseases of the colon.—Among others, Dr Winton T Stacy, St Joseph, spoke on toxemias of pregnancy before the Randolph-Monroe County Medical Society at Moberly September 12.—The St Louis Medical Society was addressed, September 19 by Drs Neil S Moore on "Transurethral Correction of Bladder Neck Obstruction," and Helmut H Kramolowsky, "Urological Diagnosis." Dr John R Caulk gave a motion picture presentation of a new cautery punch.

NEBRASKA

Society News—Drs Joseph A Henske and Clayton G Weigand, Omaha addressed the Otoe County Medical Society, Nebraska City, October 9, on practical pediatrics.—Dr Howard L Updegraff, Los Angeles, will address the Omaha-Douglas County Medical Society, Omaha October 24, on "Reconstruction of the Burned Face." Speakers at the meeting October 10 were Drs G Alexander Young on "Symptoms and Treatment of Cases Seen in the Present Epidemic of Encephalitis," James Dewey Bisgard "The Fate of Transplanted Bone," and Frederick W Niehaus, "Cardiac Therapy."

NEW YORK

District Meeting—The seventh district branch of the Medical Society of the State of New York held its twenty-seventh annual meeting at Rochester, September 21. Scientific addresses were presented by Drs Royd R Savers of the U S Public Health Service on silicosis, Charles Gordon Heyd, New York, junice, Earl R Kirkin, Rochester, Minn, diagnosis of pulmonary tuberculosis, Arthur J Bedell, Albany, medical ophthalmoscopy, and Fred H Albee, New York, bacteriophage in wound treatment.

New York City

First Harvey Lecture—Dr Rolla E Dyer of the U S Public Health Service, Washington, D C, delivered the first Harvey Lecture of the season at the New York Academy of Medicine October 19 on Typhus and Rocky Mountain Spotted Fever in the United States.

Hospital Appointments Available—The Hospital for Joint Diseases announces that six appointments for two years rotating service will be available three to begin July 1 1934 and three to begin Jan 1 1935. Graduating students and graduates (unmarried men) of class A medical schools are eligible. At the completion of the two years graduating interns are eligible for the following positions: (1) a residence in orthopedic sur-

gery with maintenance and salary of \$25 a month for the first year and \$50 a month for the second year, (2) the Frauenthal Travel Scholarship of \$2,400 a year for six months' study in Europe and six months in the United States and (3) the Mr and Mrs Frederick Brown Research Fellowships providing an award of \$2,400 each to two successful candidates. Applicants must register before December 15 and an examination will be held at the hospital, December 27.

Society News—Dr Donald Gordon will address the New York Surgical Society, October 25, on "Disabilities Following Trauma of the Extremities."—Dr Henry E Sigerist, Baltimore, gave an address on "The Medical Profession Through the Ages" at the New York Academy of Medicine, October 18.—Dr Walter B Cannon, Boston, addressed the Society for the Advancement of Gastro-Enterology, October 4, on "The Relation of the Nervous System to the Function of the Smooth Muscle."—Drs Irving S Wright and Abram Wilbur Durvee addressed the Medical Association of the Greater City of New York, October 13, on "Therapy of the More Common Peripheral Vascular Diseases" and "Present-Day Methods of Diagnosis and Study of Peripheral Vascular Disease," respectively.—George L Clark, Ph D, professor of chemistry, University of Illinois, Urbana, addressed the New York Roentgen Society at the New York Academy of Medicine, October 16 on "The Application of Roentgen Rays in Nonmedical Fields."—The Physicians and Allied Professional Political League was recently organized for the purpose of furthering public legislation and measures indispensable to the welfare of the medical and allied professions.—Dr George H Bigelow, Boston, addressed the Medical Society of the County of Queens, September 26, on "Fads and Fancies of Health." Dr Edward M Livingston gave an afternoon lecture before the society, October 6, on abdominal pain.

NORTH CAROLINA

Society News—Dr John F Brownsberger addressed the Buncombe County Medical Society, Asheville, August 21, on "Hydrotherapy and Physiotherapy in Medicine and Surgery."

New Dean at State University—Dr Charles S Mangum, professor of anatomy at the University of North Carolina Medical School since 1905, has been appointed dean to succeed Dr Isaac H Manning resigned. Dr Mangum, a graduate of Jefferson Medical College, Philadelphia, has been associated with the university for thirty-seven years having served as professor of physiology and materia medica for nine years before his appointment in anatomy. Dr Manning had been dean since 1905 and had also previously served several years as professor of physiology. He will continue as professor of physiology. Dr Manning is this year president of the Medical Society of North Carolina.

NORTH DAKOTA

Personal—Dr Harry D Benwell, Grand Forks, has been appointed special lecturer in physical diagnosis in the University of North Dakota School of Medicine and Dr Donald B Simonson, instructor in physiology and pathology.

OHIO

Health at Columbus—Telegraphic reports to the U S Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended October 7, indicated that the highest mortality rate (158) appeared for Columbus and the rate for the group of cities 98. The mortality rate for Columbus for the corresponding week of 1932 was 115 and for the group of cities 98. The annual rate for eighty-five cities for the forty weeks of 1933 was 109 as against a rate of 111 for the corresponding period of last year. Caution should be used in the interpretation of weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

Cleveland Academy News—A new section on practice of medicine was inaugurated by the Cleveland Academy of Medicine October 11 with addresses on hypochromic anemia by Dr Russell L Haden and on treatment for pernicious anemia by Drs Harold H Brittingham and Harley A Williams. The society has announced a competition for interns for the best report of a case or of research work submitted to a committee of the clinical and pathologic section. The winners will present their reports orally at the annual meeting of the section, December 1 which has been designated "Intern Night." A course of lectures on diseases of the gastro intestinal tract has

been arranged by the academy to begin October 27 and continue on Fridays to April 13. This is the second course of the kind sponsored by the academy. The registration fee is \$1. Dr. Richard Dexter is chairman of the committee in charge.

OREGON

State Medical Meeting at Portland—The fifty-ninth annual session of the Oregon State Medical Society will be held in Portland, October 26-28, at the Hotel Benson. At the opening general session there will be a symposium on cancer of the breast by Drs. Frank R. Menne, Warren C. Hunter and John Earl Else, all of Portland. The second day will be devoted to discussion of medical economics as follows:

Dr. Samuel G. Henricke, Portland: A New Deal in the Relationship of the Physician to Organizations Rendering Free or Part Pay Medical Care.

Mr. Clyde C. Foley, executive secretary of the society: The Ability of the People of Oregon to Pay for Medical Care.

R. W. Nelson, president Oregon Council of Hospitals: Experiments in Hospital Insurance.

R. R. Jackson, claim agent Oregon State Industrial Accident Commission: Medical Phases of Workmen's Compensation from the Viewpoint of the Commission.

Dr. Roscoe C. Leland, Chicago: Director, Bureau of Medical Economics, American Medical Association: The Insurance Principle in the Practice of Medicine.

Dr. Eugene P. Owen, Portland: The Aims, Organization and Operation of Professionally Controlled Group Health Associations.

At the final general session speakers will be Drs. Karl H. Martzloff, on 'Functional Uterine Bleeding'; Joseph A. Pettit, 'Practical Points in the Diagnosis of Lesions of the Oral Cavity'; Thomas M. Joyce, 'Small Intestinal Tumors'; and Goodrich C. Schauffer, 'An Unusual Paralytic Syndrome in Pregnancy'. All these speakers are residents of Portland. The medical and surgical sections will hold their meetings Thursday afternoon, October 26. The annual golf tournament will be played Saturday afternoon followed by a dinner at the Multnomah Golf Club. At the annual banquet Friday evening, Stephen B. L. Penrose, D.D., president of Whitman College, Walla Walla, will make an address on 'The First American Doctor of the Pacific Coast'.

PENNSYLVANIA

Hospital News—Dr. Maurice C. Pincoffs, Baltimore, delivered an address at Mercy Hospital, Pittsburgh, September 26, on 'Clinical Aspects of Abrupt Rises in Blood Pressure'. The occasion was a celebration of 'Mercy Day'. Citizens of Berwick oversubscribed a campaign for \$35,000 to prevent closing of the Berwick Hospital, July 20.

State Medical Election—Dr. Moses Behrend, Philadelphia, was chosen president elect of the Medical Society of the State of Pennsylvania and Dr. Donald Guthrie, Syre, was installed as president at the recent annual session in Philadelphia. Vice presidents were elected as follows: Drs. George C. Yeager, Philadelphia; Charles W. Eisenhower, York; William G. Tillman, Easton; and George B. Woods, Washington. Dr. Walter F. Donaldson, Pittsburgh, was reelected secretary for the fourteenth year. The next meeting will be held in Wilkes-Barre.

Philadelphia

University News—Dr. Jacob Parsons Schaeffer, professor of anatomy, Jefferson Medical College, was the speaker at the opening of the eighty-fourth annual session of the Woman's Medical College of Pennsylvania, September 20. His address was on 'The Scope and Method of Modern Anatomy in the Medical Curriculum'. New appointments at the college include: Drs. Helen K. Grace, assistant in clinical gynecology and bacteriology; and Regina M. Downie, assistant in clinical gastro-enterology.

Society News—Drs. George E. Pfahler and Peter J. Kapó presented a paper on 'Treatment of Cervical Adenitis by Means of Roentgen Rays' before the Philadelphia Roentgen Ray Society, October 12. Drs. Joseph B. Wolfe and Harold F. Robertson presented an address on 'Experimental Air Embolism' with motion pictures among other speakers at a meeting of the Pathological Society of Philadelphia, October 12. The Philadelphia Pediatric Society is offering an award of \$100 for the best original study pertaining to pediatrics, submitted by a physician.

RHODE ISLAND

Personal—Dr. John Champlin, Jr., Westerly, was elected chairman of the state public health commission for the next two years at the biennial session in September. The commission rotates the chairmanship among its members. Lester A. Round, Ph.D., was reelected state director of public health.

Society News—Drs. Frank A. Cummings and Isaac Gerber addressed the Providence Medical Association, October 2, on 'The Colon as a Focus of Infection' and 'Primary Carcinoma of the Lung,' respectively. Dr. Louis E. Phaneuf, Boston, addressed the Washington County Medical Society, Westerly, October 11, on 'Pelvic Inflammation in Women'.

VIRGINIA

State Medical Meeting at Lynchburg—The sixty-fourth annual session of the Medical Society of Virginia will be held in Lynchburg, October 24-26, under the presidency of Dr. James Carroll Flippin, University, with headquarters at the Virginian Hotel. Drs. Dean Lewis, President American Medical Association, and Louis Hamman, both of Baltimore, will be guest clinicians and speakers at the opening general session Tuesday evening, October 24. A symposium on diseases of the stomach will be presented Wednesday morning by Drs. William R. Bond, Richmond, who will speak on physiology of the stomach; Blanton P. Seward, Roanoke, differential diagnosis; Alexander F. Robertson, Jr., Staunton, medical treatment; Charles Bruce Morton, University, surgical treatment. Among Virginia physicians who will appear on the program are:

W. Ambrose McGee, Richmond: Importance of Body Build in Determining Ideal Weight.

William H. Goodwin, University: Endometriosis with Reference to Intestinal Implantations.

John L. K. Flannagan, Salem: State Medicine Problems.

Caleb S. Stone, University, and Hubert B. Holsinger, Farmville: Diagnosis and Treatment of Gas Brevillus Infections.

Frank S. Johns, Richmond: Surgery of the Biliary Tract.

Marshall J. Payne, Staunton: Early Diagnosis of Primary Malignant Bone Tumors in Early Life.

John Shelton Horsley, Jr., Richmond: Further Observations on the Continuous Intravenous Injection of Dextrose in Ringer's Solution.

Thomas W. Murrell, Richmond: The Problem of Hair Growth.

John A. Pitcher, Jr., Roanoke: Management of Cross Eyes in Children.

Robert P. Hawkins, Jr., Clifton Forge: Ureterosigmoid Anastomosis.

The Virginia Pediatric Society will hold its annual meeting at a luncheon, October 25, with Dr. James A. Lyon, Washington, D.C., as guest speaker on diagnosis and treatment of rheumatic heart disease in children.

GENERAL

Society News—Dr. John M. Wheeler, New York, was installed as president of the American Academy of Ophthalmology and Otolaryngology, and Dr. Wells P. Eagleton, Newark, N.J., was chosen president elect at the annual meeting in Boston in September. A silver platter was presented to Dr. Secord H. Large, Cleveland, who completed twenty-five years as controller of the academy.

Change in Status of Licensure—The Pennsylvania Board of Medical Examiners reports:

Leigh B. Shiffer, Easton: license reinstated August 30. The license had been suspended July 1, 1926.

The Board of Medical Examiners of the State Education Department of New York has recently reported the following action on licenses:

Dr. William A. Robison, Medina: license revoked in February case appealed to a higher court.

Dr. Louis H. Pincus, Yonkers: license suspended in April for one year for fraud and deceit in practice in connection with a cancer cure.

Bequests and Donations—The following bequests and donations have recently been announced:

Friends Hospital, Philadelphia: \$10,000 by the will of Mrs. Alice H. Yarnall.

Hahnemann Hospital, Philadelphia: \$5,000 from the estate of the late Miss Alice Hancock.

Woman's Homeopathic Hospital, Philadelphia: \$5,000 from the will of John W. Shuler and a deferred bequest of \$10,000 from that of Alice Hancock.

Phoenixville Hospital, Phoenixville, Pa., and Pottstown Hospital, Pottstown, Pa.: \$10,000 each by the will of Samuel P. Heister on the death of his daughter in law, Mary B. Heister.

Montgomery Hospital, Norristown, Pa.: \$5,000 by the will of the late Dr. William G. Miller for a free bed in memory of his brother and a \$10,000 trust fund for a William C. Miller room.

House of Rest at Sprain Ridge, Yonkers, N.Y.: \$5,000. Northern Westchester Hospital, Mount Kisco: \$3,000 under the will of the late Mrs. Florence Macy Sutton.

Montefiore Hospital, New York: \$25,000 and Mount Sinai Hospital, New York: \$10,000 by the will of the late Michael Gernsheim.

CORRECTION

Prolapse of Intestine Through Opening in Omentum—In a clinical note in THE JOURNAL, September 16, Dr. Antonio Gentile considered the case which he reported to be the seventeenth of its kind in medical literature. It has been called to his attention now that Dr. Edward H. McLean reported a similar case in *Northwest Medicine*, April 1932, page 193. Dr. Gentile's case would therefore be, he says, the eighteenth case of this kind in the literature.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept 30, 1933

The Noise Evil Organized Action at Last

The ill effects, on the well as on the sick, of the noises of modern civilization, particularly those due to automobiles, have been pointed out from time to time. The evil has reached such a pitch that at last corporate action is being taken. A new society called the Anti-Noise League has been formed by some well known public men, including leaders of the medical profession—Lord Horder, Sir James Purves-Stuart (neurologist) and Dr Dan Mackenzie (laryngologist and otologist). The league states that there is need for immediate action to mitigate the noise evil, especially the unnecessary hooting of automobiles in residential areas. They aim at enlisting such a force of public opinion as will induce the authorities to regulate by law forms of noise that are manifestly injurious to the comfort, health and repose of the community at large, as well as being damaging to efficiency and to the amenities of numerous urban localities. They invite all who suffer from the infliction of unnecessary noise to communicate with them. The ordinary membership fee of the league has been placed at the nominal sum of 30 cents.

Another important movement with the same end has come from the British Association for the Advancement of Science. At the recent annual meeting valuable papers were read describing the progress that has been made in the reduction of noise, especially in connection with aircraft. The association set up a committee to consider noises that it is most important to reduce and to collect information available for this purpose. Members of the public are invited to send their considered opinions as to the noises that cause them most discomfort and inconvenience to the honorary secretary, who is a professor of engineering. The committee can then select the subjects that appear to be of greatest importance and collect and review the knowledge available. It will in most instances be possible to indicate the amount of improvement that can be effected without serious loss of efficiency. If sufficient funds are available from manufacturers, it is hoped to arrange a practical demonstration at the meeting of the association next year.

A Medical Council Bill for All India

An all-India medical council bill has been passed by the legislative council of India to secure a uniform standard of qualification for physicians throughout India and to arrange for reciprocity abroad. As reported before the General Medical Council of Great Britain (the body that controls medical education and qualification for practice) in 1930 withdrew recognition of Indian medical qualifications, because it was not satisfied with the standard of examination and was refused facilities for inspection. As India was in a ferment of political agitation to a large extent anti-British the politicians ignored the good reason for the council's withdrawal of recognition and represented it as simply a slight by the British on India. The resentment aroused has taken the form of retaliation in the present bill which provides that if after the lapse of four years recognition of Indian qualifications is still refused British physicians may no longer practice in India. It may be pointed out that Indian physicians continue to practice in Great Britain and that those who have British qualifications have exactly the same legal status as Englishmen. The withdrawal of the recognition of Indian qualifications only forbids the registration of qualifications obtained in India since 1930 and prevents their holders obtaining the legal rights of qualified physicians in Great Britain. To all intents this means only the loss of power

to sue for debts for medical attendance and inability to sign death certificates. If such persons desired to practice they could do so on the same terms as osteopaths and other unqualified practitioners. Of course in a dependency of no other great power in the world could such a proposal as comes from India be possible.

Centenary of the Birth of Charles Bradlaugh

Lord Horder, who is president of the Birth Control League and leader of the movement in the medical profession, proposed the memory of Charles Bradlaugh at a dinner to celebrate the centenary of his birth. Bradlaugh may be regarded as the pioneer of birth control in this country. Lord Horder said that his handling of birth control left scarcely anything to add even after fifty years. By clear thinking and lucid expression, Bradlaugh made great contributions to the subject. What had been done since? In 1930 the Manchester police seized copies of a book called "Parenthood" with intent to prosecute the author and publisher. It was written by a competent London physician and the review, which stated that the book should meet the need of a good practical handbook on birth control with reliable data was quite a fair presentation. The process of law made possible all legal anachronisms, given sufficient stupidity on the part of the citizens who actuated these processes. Only three years ago no one could obtain any advice on contraception at any maternity center or hospital in the country that was state aided. After considerable pressure and faced with the terrible problem of maternal mortality, the ministry of health sanctioned the giving of such advice, but only in the case of women suffering from organic disease and in cases in which the bearing of children was likely to endanger life. The dissemination of that knowledge to the industrial classes which Bradlaugh rightly considered essential, was still denied though that knowledge was open to the well to do and the educated.

Automobile Accident Due to Effect of Insulin

The case was reported some time ago of a physician who was convicted of driving an automobile while under the influence of alcohol. He had diabetes and his defense was that his condition was due to insulin treatment. He appealed against the conviction but died from the disease before the case came on again. Insulin has now been the cause of conviction, without any question of alcohol. A man with a clean record as a driver drove his automobile almost at a walking pace between two lines of traffic and collided with three vehicles on the off side. The drivers shouted at him but he did not stop. He then collided with a stationary van, his car skidded and he came to a standstill on the pavement. A policeman found him in a dazed condition only partly conscious of what was said to him. He had diabetes and the police surgeon certified that he was under the influence of insulin and unfit to drive a car. Dr George Graham an authority on diabetes, gave evidence that the patient would generally have ample warning of any reaction from insulin and that his condition on the day of the accident might be due to the fact that improvement was taking place more quickly than he realized. The physician pleaded guilty to the charge of driving while under the influence of a drug which is an offense under the road traffic act. He was fined £1 and ordered to pay £42 costs and his license was suspended for five years, but he was informed that he might apply for revision of the suspension after six months if he was medically fit.

Failure of Claim for Fracture of Jaw in Extraction of Tooth

The annual report of the London and Counties Medical Protection Society contains what is considered an important test case in that it establishes that, however careful an operator

may be, fracture of bone may occur. During the extraction of a septic third lower molar tooth from a woman, the jaw was fractured horizontally backward from the apex of the tooth. The patient was removed to a hospital, where the fracture was set. After her discharge she consulted her lawyers, who wrote to the dentist claiming damages. The matter was investigated by the dental experts of the society, who were satisfied that the methods of the dentists were in every way satisfactory, and it was decided to repudiate liability. At the trial the verdict was given for the dentist. The judge in giving judgment said that in his opinion the defendant had done everything that he possibly could, before and during the operation, to prevent such an occurrence, and that what had happened was through no fault of his.

PARIS

(From Our Regular Correspondent)

Sept. 6, 1933

Undulant Fever in France

Malta fever has become a disease with ever increasing incidence. Cases are developing today in nearly every part of France. Of particular importance is the article of Ranque and Senez pertaining to the serodiagnosis of the disease. In their laboratory at Marseilles, from 1919 to 1932, they diagnosed 2,800 cases of undulant fever originating in the Provençal region of France. They performed 16,000 Wright seroreactions and conclude that this test constitutes the surest means of diagnosis if it is positive at 1:400 or above, emulsions of cultures of *Micrococcus melitensis* titrated and then sterilized by iodine being employed. If the serodiagnosis is negative on the fifth day of an infection, undulant fever can be ruled out. In the doubtful cases, a second test should be made ten to fifteen days after the first. Undulant fever, which, in this region, showed a rapid increase up to 1929, has since then become less common. The curve of monthly morbidity reveals, for each of the twelve years, a marked recrudescence toward the end of the winter and during the spring. The endemic foci are gradually becoming smaller and show a tendency to shift toward the north. Morbidity in man and abortions in animals continue to follow a frankly parallel evolution. Alimentary contagion appears to be much less frequent than contagion through contact, which at present is the most common form. Undulant fever tends to become more and more a disease occurring chiefly in farm laborers. At a session of the medical society of Marseilles, devoted to this subject, D. Olmer emphasized two points: 1. A negative sero-agglutination does not exclude the diagnosis of undulant fever. 2. Undulant fever, while widespread in the rural sections, is comparatively rare at Marseilles and when it occurs it is more commonly in the vicinity of the abattoirs. According to J. Pieri, quinine bismuth iodide is a chemotherapeutic treatment that has given good results. Benoit moved that this disease be classified among the occupational diseases. The medical society of Marseilles adopted a resolution to that effect. J. R. Paillas reported the case of an adult, who had suffered from undulant fever for eight months, the disease having failed to yield to any of the therapeutic measures employed, but who recovered after an intestinal hemorrhage. It is possible that the shock was a factor in this recovery. Mr. Roger also is convinced that direct contamination through contact with sheep or goats is at present much more frequently the cause of undulant fever than the consumption of milk or cheese. At Tunis, Dr. Setbon tried hypodermic injections of milk derived from goats known to be infected. He administered this milk, sterilized, in doses of 2 cc. for children and 5 cc. for adults, increasing the dose to 10 cc. or more according to the age and the tolerance of the patient. As a rule from eight to ten injections suffice—given daily if they are well borne otherwise at wider intervals. The reactions are mild and rare.

Mr. Vidal has remained faithful to the treatment that he has used for many years, which consists of intravenous injections of arsphenamine, in doses of from 0.004 to 0.006 Gm., administered twice a week, which gave 80 per cent of good results.

The Work of the Grancher Society

Dr. Armand Delille, general secretary of the Oeuvre Grancher, founded in 1901 by Grancher, recently rendered an account to the academy on the present status of this foundation, whose range of activity is increasing year by year. It counts at present chapters in forty-five departments of France. In 1932, the forty-five chapters selected 6,000 children who were still healthy but who had been exposed to tuberculous contagion by a bacillus-ferous parent. In order to be accepted, the roentgenograms of children must not reveal any parenchymatous or glandular changes. The children taken from their homes are placed in healthy peasant families until the disappearance of the cause of familial infection, where they are under the regular supervision of health officers of the foundation. The Oeuvre Grancher relies chiefly on private contributions for its support and, while it receives subsidies from the central government, these constitute a small proportion of its budget. The results accomplished by the society tell their own story. Morbidity from tuberculosis among the children taken from homes is low (0.3 per cent) while the mortality from tuberculosis is under 0.1 per cent. Placement in families is much less expensive than placement in institutions and contributes effectively to a restoration of their strength.

International Congress of Nurses

The International Congress of Nurses, which comprised representatives from twenty countries, assembled recently in Paris, under the chairmanship of Mlle Chaptal, founder of the training schools for nurses, in France, and today president of the international committee of nurses. Mr. Danielou, minister of public health, presided at the opening session. There were addresses by Prof. Leon Bernard, Dr. Jules Renault, Marquis de Lillers (vice president of the league of Red Cross societies), Miss M. Musson (president of the general council of the nurses of England and Wales), Miss Anny Brandt (German deaconess) and others. Another session was presided over by Miss Clara Noyes, director of the nursing service of the American Red Cross. An afternoon session was devoted to the study of the following questions: the profession of nurse and mental hygiene, the morale of the nursing profession from the legal point of view, the responsibility of the nurse as compared with that of the physician, the proportion of nurses with relation to the population and the extent of territory, the effects of the universal economic crisis on the nursing profession. The congress closed with a visit by its 2,500 participants at the Hôpital Foch, a model hospital that is being erected at the gates of Paris overlooking the magnificent panorama of the Bois de Boulogne and Paris. The hospital is reserved for the middle classes: scientists, artists, civil service employees, retired army officers and the like. The hospital comprises eight stories and has 300 rooms with modern equipment, a maternity clinic, an isolation pavilion and a training school for nurses that will accommodate 150 pupils. The congress was then transferred to Brussels, where its sessions were continued. Before their adjournment the conventionists decided on the erection of a memorial to the nurses of France which will be placed at Pierrefonds, where a French nurse, Mlle Jalaguier, was killed during the war.

Georges Hayem's Death

Prof. Georges Hayem died, at Paris, from an attack of pleurisy, at the age of 92. Born in 1841, he had a brilliant career, becoming in quick succession hospital physician and professor at the Faculté de médecine. In 1886 he was chosen a

member of the Academy of Medicine, of which he later was president. His clinical lectures, held in the Hospital St Antoine, were attended, up to the time of his retirement, by a large group of French and foreign students. He was an excellent clinician, but in his publications he always assigned an important place to the laboratory. His researches on the blood are still widely read. He was the father of modern hematology. In spite of his age, he continued in vigorous health and never missed a session of the academy. He had a magnificent old age (exempt from infirmities), in which he found pleasure in devoting himself to the engraving of medallions, an art in which he displayed unquestionable talent. He executed a large number of medallion portraits of his most eminent confreres.

BERLIN

(From Our Regular Correspondent)

Sept 4, 1933

Estimation of Duration of Treatment

Because of the expense involved, the *Krankenkassen* are interested in determining the average duration of clinical treatment. While, for various reasons, such estimates must be looked on with great caution, it may not be out of place to give some of those found in recent reports of investigations of the *Krankenkassen*. The average duration of hospitalization and convalescence following uncomplicated surgical operations, according to these computations, is from eight to ten days. In appendicitis, without abscess formation, dismissal from the hospital can be effected on the tenth day, at the latest. In operations for hernia, a hospital stay of about fourteen days and incapacity to work extending over from three to four weeks can be expected. In operations on simple goiters, eight days of sickness need not ordinarily be exceeded while the regaining of working capacity will require from two to three weeks. Removal of tumors of the breast necessitates from eight to ten days for completion of the healing process, and the restoration of working capacity requires generally about four weeks, from the beginning of treatment, without postoperative irradiation. In operations on the stomach, dismissal from the hospital can usually be effected about three weeks after the operation. In uncomplicated cholecystectomy, the clinical treatment is completed two weeks after the operation, in drainage of the common duct, in about three to four weeks. The clinical after-treatment in hemorrhoidal operations lasts about two weeks. The deduction appears justified that in typical surgical interventions, the hospitalization can usually be limited to from two to three weeks. The duration of treatment in urologic disorders is usually longer owing to the fact that more than a single organ is involved. In urologic cases, early hospitalization nearly always proves to be good economy because many superfluous measures commonly employed in ambulant therapy can be omitted. As approximate values of the duration of hospitalization one can assume in renal calculus with bilateral involvement 683 days in men and 867 days in women, unilateral nephrolithiasis 283 days in men and 334 days in women, ureteral calculus 251 days vesical calculus 268 days, pyelonephritis, 29.45 days perinephritis and periureteritis 33.45 days urinary infections in female patients with dysuric symptoms 27.5 days, urethral stricture 50.3 days renal tuberculosis, 57.6 days hydronephrosis 31.5 days renal tumors 23.1 days, benign bladder tumors 38 days cancer of the bladder, 40.9 days cancer of the prostate 55.1 days, and hypertrophy of the prostate 40.36 days.

The New State Medical Academies

For years some cities of Germany had what were called "sociogenic academies" which served for the special training of district physicians, communal physicians and panel physicians. In place of all these academies two state medical academies

have been created, one in Berlin and one in Munich, which are under the direction of the Prussian ministry of the interior and the state commissar for the public health service in Bavaria, respectively. These two academies will be opened in November and will constitute the recognized institutions in which all physicians who are in the public service will, in the future, be trained for their new duties in the fields of racial biology and demographic science. The academies will likewise give continuation courses in all fields of medicine connected with the fulfilment of national tasks. The director of each academy will appoint a manager and a directive council. Concerning the further tasks of the academies, the following information has been offered. Formerly, the individual's welfare was the keynote of the physician's activities. There developed the struggle of "all against all," which resulted in misery for the mass of the people. A more enlightened view and a prompt return to the firm foundations of the state will insure our extrication from this state of wretchedness. This prospect opens up new problems for the whole medical profession, which shall regard itself henceforth not so much as a liberal profession but as a profession that has tasks to fulfil in the service of public health. This applies more particularly to the physicians who are in the public service. The physicians must raise the new thoughts and ideas of people and nation, in the sense of a natural community of persons closely related by race and psychic characteristics, from the depths of unconscious feeling and transmute them into a principle by which to guide their practical and political conduct, for a firm government presupposes the existence of a cultured people free from hereditary taints. This goal requires the introduction of new forms of education and schooling. It is with these thoughts in view that the state medical academies have been established and equipped.

Since a certificate showing regular attendance at this institution of higher learning must be presented by all candidates for district physician and also for the communal and the welfare service, only such applicants will be considered as have acquired the necessary preliminary training in a state medical academy. A guaranty is furnished that only such applicants will be accepted as state and communal physicians as are fairly familiar with the requirements of national public health administration. A special course of study is planned for each semester, the courses extending over a period of three months. The first course of the state medical academy of Berlin, which has the character of a college will comprise race hygiene and demographic science, general social hygiene, special welfare work in connection with the public health service and social pathology, organization and administration of social services and the laws pertaining thereto, protection against air and gas menace, drill courses, practical welfare work and inspections.

Convalescent Serum for Treatment of Poliomyelitis

An announcement of the Prussian ministry of the interior states that it has been decided to continue the arrangements provided for the securing, keeping in stock storing and dispensing of serum of convalescents from poliomyelitis. It was recommended that experts be summoned immediately in order to establish as quickly as possible the nature of suspected cases of the disease and that the indications for the use of the serum be determined by consultants acting in an honorary capacity. This method proved its value in Hamburg in 1932. With regard to the preparation of the serum it was recommended that the blood donors needed be supplied by a special organization. As far as possible only the serum of persons who recovered from a manifest poliomyelitis from five weeks to three months previously should be used. Provision should be made for compensating the donors. In case of an increased demand for

serum, two large serum laboratories will keep considerable supplies of convalescents' serum in stock ready for shipment. The blood group to which the patient as well as the donors belong must be precisely established. The district physician should interest physicians in this therapy by lectures and other suitable publicity measures. In the case of patients who are already in the paralytic stage, great caution must be exercised in the use of serum, because of the danger of exacerbation. The intravenous and intralumbar routes should not be employed for the injection of serum. The scientific institutes throughout the country are requested to take up researches concerning the dissemination of poliomyelitis by healthy virus carriers, the duration of infectiousness of patients, the possibility of the transmission of an infection by food products and the relative action of serums derived from patients after the lapse of varying periods since the attack of the disease.

Antivaccination Societies Disbanded

As is well known, in spite of the evident excellent results of compulsory vaccination against smallpox, as prescribed by law in the German reich, there is still a group of persons vigorously opposing vaccination against smallpox. The ministry of Saxony has recently disbanded the antivaccinationists societies, including the Impfgegner-Aerztebund in Dresden for the territory of the state of Saxony, and has prohibited, at the same time, all public activities in opposition to vaccination against smallpox. A penalty will be imposed on any person who actively opposes such vaccination. The headquarters of the disbanded societies are being closed and all their equipment is being confiscated.

Number of War Injured Entitled to Aid

This year's census of the war injured and the survivors of participants in the war gave a total of 808,574 war injured entitled to receive aid. The number of war injured, which in 1931 numbered 838,360, decreased from 1931 to 1932 by about 18,000, and from 1932 to 1933 by 11,829. The decrease was due chiefly to deaths (8,912). The number of survivors who receive pensions and special aid amounts now to 893,582. The number of widows shows a slight decline. The number of orphans shows, as was expected, a further marked decrease.

Welfare Aid for the Sick

During the calendar year 1931 (or, in some cities, during the fiscal year 1931-1932), weekly benefits to the sick were granted by forty-one cities if the income did not exceed from one and one-half to two times the amount of general welfare aid and by five cities if the income did not exceed from two and one-half to three times the amount of general welfare aid, other cities followed other plans. In twenty-three cities the weekly benefits of the Krankenkassen were paid out in the welfare centers for gravidas and puerperants. In nineteen cities arrangements were made with midwives in connection with the discovery of gravidas. Courses of instruction for expectant and young mothers were given in only thirty-nine cities. In the follow-up infant welfare service, family welfare workers were employed in seventy-three cities and special welfare workers in twenty-one cities, contact having been made by the service with 77 per cent of the new-born. Young children were sent by seventy-six cities to recreation centers, young children received supplementary meals in fifty cities. The tuberculosis welfare service performed nearly 700,000 medical examinations and about 440,000 roentgenologic examinations and referred about 123,000 examinees to attending physicians and to therapeutic centers. Out of about 185,000 persons who appeared at the consultation centers for venereal patients, 35 per cent were found to be ill. In each thousand inhabitants, 3.1 persons were being cared for at the end of the year by the

welfare aid service for venereal patients. Of the persons cared for by the welfare aid service for cripples, 13 per cent were more than 18 years old, 83 per cent of the persons summoned for examination appeared in the centers of the welfare aid service for cripples. Eight per cent of the alcohol addicts cared for were women. Only nineteen cities had special welfare arrangements for cancer patients. Forty-four cities have welfare aid services in the hospitals, of these, twenty-five have special consultation centers. Whereas in the other branches of the welfare aid service the management is chiefly in the hands of physicians, here independent welfare workers predominate, in twenty-one cities about 55,000 consultations were given. The marriage consultation centers were used to only a slight extent. Consultation centers for athletic sports, which were established at first in sixty-six cities, had to be abandoned in ten cities. In thirty-three cities these consultation centers were available for every one but in other cities there were restrictions, some being intended only for members of athletic associations. Examination fees were exacted for marriage consultation and consultation in venereal disease in only one and three cities, respectively and for consultation on athletic sports in twelve cities. In seventy-four of these cities the reported branches of the welfare aid service required the expenditure of 27,500,000 marks (nearly \$10,000,000 current exchange), about 40 per cent of which was for personnel.

BELGIUM

(From Our Regular Correspondent)

Aug. 25, 1933

The Brussels Medical Convention

The thirteenth session of the Journées médicales de Bruxelles was devoted to the subject of syphilis. Monday and Tuesday mornings were given over to clinics or to demonstrations in hospitals and clinics. On Sunday and on Monday and Tuesday afternoons papers were read at the University of Brussels. The queen attended the opening session, and Count Carton de Wiart gave the address of welcome to the foreign delegates. Recalling that he presided, in 1921, at the first session of the Journées médicales the minister pointed out that the organizers, who wished to bring about a closer relation between practitioners and investigators, had realized their purpose. After evaluating the medical profession as the most noble and useful of the professions, he outlined the program of the thirteenth session. The minister of health surveyed the results secured by syphilology, to which the Belgian scientists Bordet and Gengou made important contributions. Not only through research has Belgium contributed to the crusade against syphilis but also through an energetic national campaign. The opening session closed with an address by Mr. Charles Sarolea, which dealt with the physician and medicine in European literature. At the close of the Journées médicales the Palais des Thermes, at Ostende, was dedicated. The Palais des Thermes is a new institute of physical therapy and seaside treatment, which gives Ostende a medical organization that is unique in Europe. Dr. A. Depoorter, medical director of the institute, gave an address on the work that is to be carried out at the Ostende mineral springs.

Among the more important presentations was "Syphilis in Earlier Times and Today," by Dr. Spilmann. One found formerly a fairly uniform distribution of endemic syphilis in various countries. At present that no longer seems to be the case. Denmark and Belgium have now but little syphilis, whereas France observes no decrease of the disease. Spilmann questions, however, the value of many statistics, which are necessarily incomplete, even in the large cities. It is well known that many practitioners and private institutes do not report their statistics. Furthermore there are many unknown

quantities in this field biotropism, regional influences, racial influences and seasonal influences, which may increase the virulence and aid in the dissemination of the disease

VARIATIONS IN REACTIONS TO SYPHILIS

Dr B Dujardin discussed "The Question of Terrain in Syphilis." It is surprising that the same micro-organism may give rise to such diverse reactions in two different organisms. One never sees two cases of typhoid or two cases of tabes that develop in exactly the same manner. Syphilis has a secondary stage, which decides the later evolution of the infection, or the patient enters an allergic stage that is manifested by a gumma, for example, or it will develop in an anallergic direction, ending finally in dementia paralytica. While the cause of these differences in cases is not known, it is possible to surmise what takes place. Experience has taught that the skin reactions commonly bring relief to conflicts that occur in the deeper tissues (cutaneous reactions to tuberculin, the Schick reaction). Whether it is an unsensitized or a sensitized individual, the reactions of the skin to an antigen vary greatly in different individuals. Some will give no reaction, others will present a severe local or general shock. If one subjects syphilitic patients to these tests, it will be observed that tabetic patients give no reaction (anallergic) but that patients with tertiary symptoms show marked reactions. Between these two extremes there are a multitude of intermediate reactions.

Even in the secondary stage, one may observe this variation in reactions. The syphilitic patient in the secondary stage who is going to become allergic has not always been allergic. In contrast with the syphilitic patient in the secondary stage, a tabetic patient (anallergic) may become sensitized in some peculiar and sudden manner, as by ocular neuritis. Only the female presents leukomelanoderma, which, with its frank adenopathy, requires months to form. Likewise osteitis and osteoarthritis are found more often in females. On the other hand, in anallergic manifestations of syphilis, such as dementia paralytica, one observes ten times as many cases in men as in women. Similar observations have been made with regard to congenital syphilis. Male fetuses are much more susceptible than the female, and stillbirths are much more frequent in males.

This allergy is not, however, specific, either in man or in animals. Allergic persons, when brought in contact with various antigens, give almost parallel reactions. There is, therefore, a polyvalent allergy involved. If all this is true, one can make, on the basis of these intracutaneous reactions, useful therapeutic deductions. If a syphilitic person is anallergic, an attempt should be made to sensitize him, and, if another person is already sensitized, one might be able to increase his allergic capacities. Injection of proteins and malarialization appear to act in this manner. Thus one can see how important is the terrain in the evolution of syphilis, and again, the enormous service that may be rendered by treatment directed toward modification of the terrain.

SYPHILIS IN THE CONGO REGION

Drs Van Den Branden and Dubois presented a paper on "Syphilis in the Congo Region and Its Influence on Tropical Pathology." They called attention to the frequency of syphilis in the Belgian Congo and cited statistics showing that the same is true in many other colonies (Madagascar, French Africa). They described the evolution of syphilis in the natives, the frequency of florid secondary syphilis and of tertiary syphilis resembling closely the tertiary stage of yaws. A few cases of dementia paralytica and of tabes appear to be demonstrated. Opinions are contradictory with regard to the relation between syphilis and trypanosomiasis. In twenty-six cases in which syphilis and trypanosomiasis were diagnosed with certainty, the authors found the same proportion of good results and therapeutic failures as in the group of trypanosomiasis patients that

were not syphilitic. They have reached the tentative conclusion that syphilis does not aggravate trypanosomiasis, but they nevertheless consider it advisable in such cases to administer a combined form of treatment. With regard to the relation of syphilis and malaria, they stated that, while arsphenamines may have a curative effect in malaria due to *Plasmodium vivax*, it appears on the contrary that they may act as a stimulant on *Plasmodium falciparum*. The arsenical treatment of syphilis may therefore be indicated in malaria. Malaria contracted after syphilis would not prevent, by any means, the evolution of neurosyphilis. Syphilis in the Congo region is developing toward neurotropism in spite of the endemic incidence of malaria. Nothing definite is known with regard to the relation of syphilis and recurrent fever.

With reference to the relation between syphilis and yaws, it was stated that in regions in which yaws is widely prevalent syphilis does not progress.

The authors affirmed the independence of syphilis and tropical ulcer, although certain atypical ulcers may possibly develop from syphilis or yaws. The argument based on the action of arsphenamines on tropical ulcer has no value, since the fusospirillary organisms encountered in tropical ulcer are highly sensitive to arsenic.

In spite of the large number of persons in the Belgian Congo found with tattoo markings, the authors did not recall a single case of syphilitic lesions or lesions of yaws developing on keloid cicatrices.

PROPHYLAXIS OF CONGENITAL SYPHILIS

Dr Alexandre Couvelaire of Paris pointed out that the prophylaxis of congenital syphilis dates back many years. Mauriceau, Ambroise Pare and others studied the subject. Their field of action was, however, limited, whereas today prophylaxis might affect the masses, if one so desired. At the Clinique Beaudelocque, the application of prophylactic treatment reduced the fetal mortality, in cases of syphilis acquired during gestation, from 75 per cent to 15 per cent. In cases of syphilis recently acquired at the time of conception, a reduction from 70 per cent to 5-15 per cent was observed, and in cases of syphilis of long standing, although of congenital origin, a decline of from 20 per cent to 7 per cent was noted.

The results of prophylactic endeavors depend on the interest that the public authorities take in the detection centers, the importance of which cannot be too forcibly impressed on the medical profession, notably in connection with prenatal consultations and obstetric services.

THE MODE OF ACTION OF MEDICINES

Dr A. Dustin, in his paper on "Anatomopathologic Side-lights on the Mode of Action of Chemotherapeutic Products," said that the ideas concerning the mode of action of medicine, have changed during recent years. Ehrlich thought that they had a direct sterilizing action on the infective agent, but an objection to his theory was the marked dilution in the organism of the compound introduced, and its rapid elimination. Levaditi and his co-workers, following researches on the action of atoxyl on trypanosomes, think that there is produced a combination of the drug and a protein belonging to the organism itself—a toxiprotein—acting thus directly on the infective agent and also through the defense forces of the organism.

Aschoff introduced into these conceptions of the action of medicines the idea of the reticulo-endothelial system being endowed with peculiar fixation properties toward stains, chemical substances and various particles. The reactions of the lymphoid organs are characterized by the rapidity of their appearance and may be divided into three forms: mitoses, pyknoses and cellular digestion in the macrophages after phagocytosis of the latter, with liberation of their products of disintegration.

These observations serve to explain the part played by the thymus in immunity in relation to the extreme sensitiveness of the thymocytes, the period of latency in the action of chemotherapeutic products necessitated by the ensemble of tissue changes that they cause, the fact that various substances are capable of acting on the same micro-organism, and the important part taken by the injected organism in the mechanism of the action of various therapeutic substances

SYPHILIS AND TRAUMA

Dr Rioul Bernard of Brussels presented a paper on "Syphilis in Relation to Trauma" The author considered to what extent syphilis may modify the consequences of a trauma and to what extent the traumatism may influence the evolution and the manifestations of syphilis There are indisputable cases in which a chancre became grafted on a wound or a case of syphilis inoculated directly through a traumatism These are exceptional Cases have been seen in which syphilitic symptoms developed at a spot that had been traumatized With regard to ocular, visceral and nervous forms of syphilis, traumatic manifestations of the disease are rare and even questionable Nevertheless, a traumatism may have been the precipitating cause Trauma may reveal the presence of congenital syphilis, which may retard the consolidation of a fracture A diagnosis of traumatic syphilis must be reached on careful clinical examination as well as on serologic tests A test treatment will furnish valuable information The pathogenesis of such accidents is obscure One invokes usually mechanical factors such as a circulatory disturbance resulting from traumatism No doubt the state of sensitization or immunization plays an important part To prevent the appearance of syphilitic accidents in a traumatized person having a history of syphilis it is necessary to institute energetic treatment extending over a long period Thus will be prevented what the author calls the avoidable complications" due to lack of care

Marriages

ARTHUR S JONES Huntington W Va to Miss Fanny Harrison Mills of Russellville, Ky, in Louisville, Ky October 11

WILLIAM AUGUSTUS ANTHONY Gastonia N C to Miss Katherine Josephine Williams of Rock Hill S C July 15

LATES SHUFORD PALMER, Valdese N C to Miss Lillian Alten Wigglesworth of Richmond Va, September 2

LEWIS HOWARD CAPPENTER Winslow Wash to Miss Ruth Allen of Port Blakely in Vancouver, B C, July 7

DAVID MITCHELL KEATING Cleveland Heights, Ohio to Miss Louise Carew of Youngstown, June 28

AUSTIN LEWIS KIMBLE Manoa Pa to Miss Eunice May Rousher of Ocean City, N J September 7

NORMAN A POKORNY, Boston, to Miss Ethel Gladys Kortlucke of Richmond Hill N Y July 27

FRANCIS XAVIER TAMISIEA Missouri Valley, Iowa, to Miss Frances Stessman of Panama, June 5

JOHN LESH JACOBS New York to Miss Marjorie Franks Evatt of Brookline, Mass, June 15

HUGH C NICKSON Independence, Mo, to Miss Carolyn Woodward Berridge, recently

WILLIAM H S SPEISSEGGGER Charleston S C to Miss Laura Agnes Saville, July 18

WADE THOMAS PARKER Fayetteville N C to Miss Margaret Frances Blue, in July

LELAND L BULL Seattle to Miss Alice Horstman of Port Angeles, Wash July 14

KENNETH REW to Miss Catherine McNary both of Pendleton Ore August 4

CARLYLE ROBERTS PEARSON, Madison Wis to Miss Edith Hope Smith July 8

Deaths

Joseph Armin Stackhouse, Erie, Pa, Hahnemann Medical College and Hospital of Philadelphia, 1911, member of the Medical Society of the State of Pennsylvania, past president and secretary of the Erie County Medical Society served during the World War attending physician to the Pennsylvania Soldiers' and Sailors' Home Hospital, aged 43, died, September 4 at his home in Girard

Samuel Franklin Adams @ White Plains, N Y New York Homeopathic Medical College and Flower Hospital New York 1920 assistant professor of medicine at his alma mater member of the American College of Physicians on the staffs of the Flower Hospital and the Metropolitan Hospital New York and St Agnes' and White Plains hospitals, aged 37, died September 28 of pneumonia

Claude Allen Thompson @ Muskogee, Okla Kansas City (Mo) Medical College, 1900 member of the House of Delegates of the American Medical Association in 1911 and in 1922 for many years secretary of the Oklahoma State Medical Association editor of the *Journal of the Oklahoma State Medical Association* aged 58, died, October 2, of a self inflicted bullet wound

John Wix Thomas @ Phoenix Ariz Chicago Homeopathic Medical College 1891 past president of the Maricopa County Medical Society, formerly secretary of the state board of medical examiners on the staff of the Good Samaritan Hospital aged 76, died, August 30, in the Good Samaritan Hospital Los Angeles of lobar pneumonia

Frank F Greene, Olathe, Kan, University of Buffalo (N Y) School of Medicine 1879 member of the Kansas Medical Society past president and secretary of the Johnson County Medical Society formerly health officer of Olathe, aged 81 died September 14, in the Bell Memorial Hospital, Kansas City Mo of bronchopneumonia

Oscar Ofner, Chicago Hungarian Royal Pizman Petrus University of Sciences Medical Faculty Budapest, Hungary 1898 member of the Illinois State Medical Society, fellow of the American College of Surgeons on the staffs of St Elizabeths St Josephs and Alexian Brothers hospitals, aged 59, died October 2, of heart disease

Joseph Calvert Suter, Grafton N D Trinity Medical College Toronto Ont Canada, 1891 past president of the North Dakota Board of Medical Examiners, fellow of the American College of Surgeons on the staff of the Grafton Deaconess Hospital, aged 66 died, September 3 of cerebral hemorrhage

Edgar William Allin, Edmonton Alta Canada Trinity Medical College Toronto Ont 1902 L R C P, London, and M R C S England 1903 past president of the Alberta Medical Association fellow of the American College of Surgeons, on the staff of the Royal Alexandra Hospital, aged 58, died, July 15

Davis Baker @ Glens Falls N Y Cornell University Medical College, New York 1909 president of the Warren County Medical Society fellow of the American College of Surgeons surgeon to the Glens Falls Hospital and the Emma Lang Stevens Hospital, Granville, aged 48, died, September 28

Alfred E Diehl, Buffalo, University of Pennsylvania School of Medicine, Philadelphia 1892, member of the Medical Society of the State of New York, formerly associate professor of dermatology University of Buffalo School of Medicine aged 64 died, September 20, of coronary thrombosis

Marvin Warren Reed, Denver, Jefferson Medical College of Philadelphia 1903 member of the Colorado State Medical Society served during the World War on the staffs of St Josephs, St Anthonys and St Lukes hospitals aged 54, was found dead September 2 of pulmonary hemorrhage

John Thomas Tucker, Waverly N Y Long Island College Hospital Brooklyn 1885 formerly village president and member and president of the board of education on the staffs of the Tioga General Hospital Waverly, and the Robert Packer Hospital Sayre Pa aged 73 died, August 20

Frank Edward Abbott, Indianapolis Medical College of Indiana Indianapolis 1905 member of the Indiana State Medical Association on the staffs of the Indianapolis City Hospital and the Methodist Episcopal Hospital aged 52 died, September 17 in a local hospital, of coronary embolus

Frederick Ellsworth Clark, Burlington Vt University of Vermont College of Medicine Burlington 1894 formerly associate professor of pathology at his alma mater, served

during the World War, aged 64, died suddenly, September 11, of hemiplegia and coronary thrombosis

Thomas F Willson, Arcola, Miss, University College of Medicine, Richmond, Va, 1899, member of the Mississippi State Medical Association, aged 54, died, September 23, in the King's Daughters' Hospital, Greenville, of hemorrhage due to duodenal ulcer and bronchopneumonia

Harry Leslie Stilphen, Richmond, Maine, University of Vermont College of Medicine, Burlington, 1913 member of the Maine Medical Association, president of the Sagadahoc County Medical Society, aged 50, died, September 9, in the Maine General Hospital, Portland

Benjamin Franklin Iden, Manassas, Va Washington University School of Medicine, Baltimore, 1872, member of the Medical Society of Virginia, aged 89, died, September 22, in the Providence Hospital, Washington, D C, of an injury received when kicked by a horse

De Alton Burr Potter, Salisbury, Md University of Maryland School of Medicine, Baltimore, 1904, member of the Medical and Chirurgical Faculty of Maryland, aged 54, on the staff of the Peninsula General Hospital, where he died, September 12, of heart disease

William Purkis Watson, Pawtucket R I, Bellevue Hospital Medical College, New York, 1879, member of the Rhode Island Medical Society, for many years on the staff of the Memorial Hospital, aged 81, died, September 12, in Saco, Maine, of heart disease

Pierre Gerold Fermier * Leesburg Ind, Medical College of Indiana, Indianapolis, 1894, county health officer, served during the World War, aged 47, died September 19 in the McDonald Hospital, Warsaw, of injuries received when struck by an automobile

Thomas Joseph Francis Murphy, St Jean D'Iberville Que, Canada, Bellevue Hospital Medical College New York, 1888, formerly professor of clinical surgery, Dalhousie University Faculty of Medicine, Halifax, N S, aged 68, died, July 6, in Montreal

Joseph Elmer Schaefer, Cogan Station Pa College of Physicians and Surgeons, Baltimore 1896 member of the Medical Society of the State of Pennsylvania, aged 65, died September 17, in the Williamsport (Pa) Hospital, of myelogenous leukemia

Charles Wise Byrd, New York, University College of Medicine, Richmond Va, 1909 member of the Medical Society of the State of New York on the staff of the Manhattan Eye Ear and Throat Hospital, aged 47 died September 14, of heart disease

Marcus T Hickman, Hudson N C University College of Medicine, Richmond, Va 1909 member of the Medical Society of the State of North Carolina, aged 51, died September 18, in the Caldwell Hospital, Lenoir, of a ruptured appendix

Charles C Peck, Harvard Ill Hahnemann Medical College and Hospital, Chicago, 1895 member of the Illinois State Medical Society, formerly county coroner at one time proprietor of a hospital bearing his name, aged 62 died, September 17

Robert S Maison, Chester Pa University of Pennsylvania School of Medicine Philadelphia 1890 member of the Medical Society of the State of Pennsylvania, aged 66 died August 31, in Manasquan N J of chronic myocarditis and nephritis

Joseph Charles Edward Daunais, Ste Anne des Plaines, Que Canada School of Medicine and Surgery of Montreal Faculty of Medicine of the University of Laval at Montreal, 1891 aged 66 died May 1 of hepatic and renal insufficiency

Ray Morrison Means, Shivel Ky University of Louisville School of Medicine 1904 served during the World War, aged 51 on the staff of the SS Mary and Elizabeth Hospital where he died September 18 of myelogenous leukemia

Charles Sumner Knight, Falmouth Heights Mass University of Michigan Medical School Ann Arbor 1878 member of the Massachusetts Medical Society, aged 77 died September 21 at Westboro of cerebral hemorrhage

Frank L Kinsey, Fremont Ohio Medical College of Ohio Cincinnati 1882 member of the Ohio State Medical Association, aged 72 died September 8 in the Memorial Hospital following an operation for appendicitis

Isaac Bowden * Port Huron Mich Detroit College of Medicine 1894 served during the World War, aged 58 on the staff of the Port Huron Hospital where he died September 19 of carcinoma of the prostate

John Roberts Green, Nashville, Tenn, University of Tennessee Medical Department, 1904 member of the Tennessee State Medical Association, aged 60, died, September 3, in a local hospital of strangulated hernia

Claude Raymond Matthis, Amity, Ore, Memphis (Tenn) Hospital Medical College, 1894, past president of the Oregon Board of Medical Examiners, aged 64, died, August 2, following an operation for mastoiditis

Addison Kendall * Great Bend, Kan, Hering Medical College, Chicago 1901, formerly member of the state board of medical registration and examination and state board of health, aged 68, died, August 29

Charles Martelle Coker, Eden, Miss Memphis (Tenn) Hospital Medical College, 1896, aged 65, died September 20, in a hospital at Vicksburg, of pernicious anemia, hypertrophy of the prostate and phlebitis

Robert Lee Marchant, Greer S C, Kentucky School of Medicine, Louisville, 1889 member of the South Carolina Medical Association, aged 67, died, September 8, of acute dilatation of the heart

John Stephen Malone, Poughkeepsie, N Y, Syracuse University College of Medicine, 1919, formerly on the staff of the Vassar Brothers Hospital, aged 38, died, September 22, of heart disease

Thornton Kirkland Perry, Albany, N Y, Albany Medical College, 1875, aged 81, died, September 5, in the Hudson River State Hospital, Poughkeepsie, of arteriosclerosis and chronic myocarditis

Isaac Barber, Philipsburg, N J University of Pennsylvania School of Medicine, Philadelphia, 1879 formerly city physician and health officer, aged 79, died, September 30, of arterial hypertension

Chalmer Roswell Hecox, Golden Ill, College of Physicians and Surgeons Keokuk, Iowa 1897 member of the Illinois State Medical Society, aged 58, died suddenly, September 8, of heart disease

Harry Nathaniel Mayo, Los Angeles Baltimore Medical College, 1895, fellow of the American College of Surgeons, served during the World War, aged 65, died, September 7, of arteriosclerosis

William E Holmes, Brownsville Ohio, Medical College of Ohio, Cincinnati, 1884, aged 77 died September 10 in the City Hospital, Newark, of paralysis agitans and hypertrophy of the prostate

T W Williams, Litchfield Ill American Medical College, St Louis 1879, aged 78, died suddenly, August 31, in St Luke's Hospital, Davenport, Iowa, of hemorrhage due to duodenal ulcer

Tina Gardiner Head Patrick, Vancouver B C Canada Trinity Medical College Toronto, Ont, 1896, aged 71 died May 17 in the General Hospital, of a fractured hip received in a fall

John Marius Challen Cook, Weston, Ohio, Long Island College Hospital, Brooklyn, 1887 for many years member of the board of education, aged 74, died, September 10, of heart disease

Ava Hamlin Fenn, Meriden, Conn College of Physicians and Surgeons, Baltimore, 1886, member of the Connecticut State Medical Society, aged 86, died, September 15, of heart disease

Owen Riley Marshall, Moody, Texas, Vanderbilt University School of Medicine Nashville Tenn 1899, served during the World War, aged 61, died September 9, of heart disease

Robert Edwin Wilson, Davidson Okla Southwestern University Medical College Dallas, Texas 1904 aged 62, died July 24 in Wichita Falls Texas, of pneumonia

Laurence Baily Powell, Moorestown N J Hahnemann Medical College and Hospital of Philadelphia 1931 aged 26 died September 18 of a self inflicted bullet wound

James Drew Ingram, McBee S C Atlanta College of Physicians and Surgeons 1902 aged 55 died September 15, in the McLeod Infirmary, Florence of pneumonia

Albert Edwards Wilson * Norfolk Va University of Maryland School of Medicine Baltimore, 1896 aged 65, died in September of benign prostatic hypertrophy

Seth Harold Jones, Holt, Mich University of Michigan Homeopathic Medical School Ann Arbor 1906 aged 53 died September 5 of abdominal metastatic sarcoma

Anderson P Jones * Pennsboro, W Va (licensed West Virginia by years of practice) county health officer, aged 80 died, September 9 of coronary embolism

Joseph Odilon Drouin, Grande Baie, Que., Canada, Laval University Faculty of Medicine, Quebec, 1900, aged 57, died suddenly, July 29, of cerebral hemorrhage

Francis H. Geer, Claremont, Calif., Medical College of Ohio, Cincinnati, 1877, aged 84, died, July 20, in Pomona, of arteriosclerosis and cerebral hemorrhage

Michael Arthur Mellenthin, Los Angeles, Medical Department of Hamline University, Minneapolis, 1906, aged 50, died, September 24, of heart disease

David C. McKenzie, Granville, N. Y., University of Maryland School of Medicine, Baltimore, 1891, aged 67, died, September 17, of pulmonary tuberculosis

Joseph Ditman Lawrence, Sprigg, W. Va., Hahnemann Medical College and Hospital of Philadelphia, 1893, aged 62, died, August 25, of angina pectoris

Walter Denison Leach, Detroit Lakes, Minn., College of Physicians and Surgeons of Chicago, 1895, aged 76, died suddenly, September 4, of heart disease

Edward Joseph Donlin, New York, University of the City of New York Medical Department, 1876, aged 81, died, September 23, of bronchopneumonia

Louis E. Eddy, Port Clinton, Ohio, Louisville (Ky.) Medical College, 1893, aged 72, died, September 28, in the Pool Hospital, of cardiac asthma

Eugene Derome dit Descarreau, St. Augustin de Quebec, Que., Canada, Laval University Faculty of Medicine, Quebec, 1901, aged 58, died, August 8

Lurana Abbie Chubbuck, New Bedford, Mass., Boston University School of Medicine, 1894, aged 76, died, September 1, of coronary thrombosis

William C. Lewis, Jersey City, N. J., University of Pennsylvania School of Medicine, Philadelphia, 1880, aged 75, died, September 12, of cholelithiasis

James Lee Bell, Malone, Fla., Georgia College of Eclectic Medicine and Surgery, Atlanta, 1909, aged 52, died, September 8, of cerebral hemorrhage

Paul Trudel, Ste. Genevieve De Batiscan, Que., Canada, School of Medicine and Surgery of Montreal, 1896, aged 59, died, June 19, of carcinoma

Andrew Johnson Isham, Maryville, Tenn., University of the South Medical Department, Sewanee, 1900, aged 70, died, September 1, of pneumonia

Ira E. C. W. Smith, Palmetto, Ga., Atlanta College of Physicians and Surgeons, 1905, aged 50, died, September 4, in Newnan, of pneumonia

Clarence Niles Payne, Fairfield, Conn., New York Homeopathic Medical College, 1885, aged 71, died, September 8, of carcinoma of the stomach

Haude T. Dacus, Williamston, S. C., Baltimore Medical College, 1902, aged 54, died, September 13, in the Greenville (S. C.) City Hospital

William Bay Stoker, Ottumwa, Iowa, College of Physicians and Surgeons, Keokuk, 1896, aged 65, died, September 6, of pernicious anemia

Vincent Z. Keeler, Harleyville, Pa., Jefferson Medical College of Philadelphia, 1880, aged 75, died, September 11, of heart disease

Fred McCandless, Ludington, Mich., Chicago Homeopathic Medical College, 1894, aged 64, died, September 11, of locomotor ataxia

Reuben Hugh Hannah, Prague, Okla., Gate City Medical College, Dallas, Texas, 1906, aged 75, died, July 17, of heart disease

Peter L. Coble, Celestine, Ind. (licensed, Indiana 1897) formerly state senator, aged 80, died, September 14, of heart disease

Peter Goosen, Enid, Okla., American Medical College, St. Louis, 1891, aged 78, died, August 30, of cerebral hemorrhage

Henry C. Iseman, Beaver Falls, Pa. (licensed, Pennsylvania, 1885) aged 101, died, September 5, in Ithaca, Mich.

George Cameron McGibbon, Honeywood, Ont., Canada, Trinity Medical College, Toronto, 1899, aged 62, died, July 28

Joseph Addison Sweeney, Louisville, Ky., Hospital College of Medicine, Louisville, 1902, aged 59, died, July 17

Earl Kinton Wheelis, Blanton, Ala., Atlanta College of Physicians and Surgeons, 1911, aged 44, died, July 13

R. Carson Stone, Russellville, Tenn. (licensed, Tennessee, 1889), aged 72, died, September 12, at Clinton

Correspondence

PSEUDO-AGGLUTINATION IN BLOOD

To the Editor—In THE JOURNAL August 19, page 627, a correspondent writes concerning the difficulties he is encountering when determining the blood groups of pregnant and anemic patients. In your reply you point out that the blood group of an individual remains constant throughout life and is unaffected by disease or pregnancy. However, there are other phenomena that have been mistaken for true iso agglutination, and one of these (rouleau formation) is particularly pronounced in pregnant women.

Rouleau formation is a phenomenon occurring in normal individuals (but only to a mild degree), which is characterized by a piling up of the blood cells, resembling piles of coins. In conditions associated with a rapid sedimentation time, this phenomenon is much more marked. In pregnancy and severe anemias rouleau formation may be so pronounced that the clumps become large and irregular, resembling superficially the clumping caused by true iso agglutination. Such pronounced rouleau formation is therefore known as "pseudo agglutination." Pseudo-agglutination can most readily be recognized by examination of the specimen under the high power of the microscope and by the fact that the clumps disappear on slight dilution. (Other criteria for differentiating true iso agglutination and pseudo-agglutination are given by Landsteiner in Jordan and Falk's *Newer Knowledge of Bacteriology and Immunology*, 1928, p. 899, and by A. F. Coca, *Note Concerning Differences Between the Clumping of Pseudo-Agglutination and Iso Agglutination*, *J. Immunol.* 20:263 [April] 1931.) The simplest way to prevent pseudo agglutination is by making the tests with dilute suspensions of the patient's blood (from 1 to 5 per cent). The reason for this is that the active principle responsible for pseudo-agglutination is present in the serum. The most certain way of preventing pseudo-agglutination is by using washed cells, thus entirely removing the troublesome serum.

ALEXANDER S. WIENER, M.D., Brooklyn

CONTROL OF TYPHOID CARRIERS

To the Editor—As a former health officer I read with great interest the paper by Bigelow and Anderson on the cure of typhoid carriers, in THE JOURNAL, July 29. My interest was aroused at the remark "our inability to make certain that the stool specimen submitted actually came from the carrier," as nearly thirty years ago, in a case in which I rightly suspected that I was deceived as to the origin of the stool specimens, I employed a method of control without hospitalizing the suspected carrier, that might be of use also in American health offices.

Before recommending it I may tell a curious event, which illustrates the necessity of always being suspicious. A farmer's wife living in a hamlet in Westphalia was under observation as a typhoid carrier. The specimens of her stool varied from positive to negative. Once when she was told that the last specimen had been found positive she came to the office of the medical officer protesting. You can see that the examinations of your laboratory are not reliable. The last specimen that I handed to the health surveyor was not stool of mine but of my friend Mrs. Z'. Notwithstanding the fact that this woman resided in another hamlet beyond the border of the county, it was managed to procure an authentic stool specimen from her, with the result that one more typhoid carrier was listed.

The procedure adopted by me is the following. The nurse or disinfecter collecting the specimens makes the suspected carrier swallow in his presence a capsule or wafer of an equal

mixture of lycopodium, powdered animal charcoal and sodium sulphate or another mild laxative and instructs him to collect the stool of the next morning. In the laboratory, besides the cultivation of bacteria, the lycopodium spores are looked for with the microscope in the black parts of the stool in the same manner as eggs of helminths. I was led to adopt the procedure by the remark in a textbook that, in seeking the eggs of helminths, one must not be deceived by finding the curious and characteristic spores of lycopodium, as it is customary to powder pills with lycopodium.

I do not offer this procedure as a substitute for the method of Bigelow and Anderson, who recommend bile cultures by the duodenal tube before and after an operation on a carrier, but in the first year, before a carrier is finally listed, and in the control of carriers and suspected persons who decline to be hospitalized, it should be of value in ascertaining the true origin of the specimens.

WERNER ROSENTHAL, M.D., Magdeburg, Germany

USE OF SODIUM AMYTAL IN STRYCHNINE POISONING

To the Editor—In a recent edition of THE JOURNAL I read with interest an article regarding the intravenous use of sodium amytal in the treatment of strychnine poisoning. In the past week I have had the opportunity to put this new treatment into practice with favorable results. I was called to see a man, aged 33, who had taken what I estimated to be 15 grains (1 Gm.) of strychnine sulphate crystals about two hours before my arrival. I base my estimate as to the amount on the fact that the bottle containing the remaining strychnine was one-half empty, the full bottle having contained one-sixteenth ounce, and according to the man's wife, who was present, he had consumed this amount. The patient when first seen was lying quiet but in a few seconds a typical strychnine spasm manifested itself. The position was that of opisthotonos, the spasm lasting for about one and one-half minutes. The typical sensation of approaching death (as described by Beckman) was present between this and the preceding spasm, and manifested itself in about five minutes. Two glasses of mustard water were administered as an emetic immediately with no resulting emesis. It may be of interest to note that the patient in attempting to bring about emesis by means of gagging himself with his finger was quite severely bitten, owing to the sudden contraction of the muscles acting on the mandible.

The patient was given 6 grains (0.4 Gm.) of sodium amytal orally and taken to the hospital. There the spasms were even more severe and gastric lavage was instituted. Owing to the severe contractions of the mandible, a nasal tube was used in the lavage, the oral route not being practical.

After the lavage, 1½ ounces (45 Gm.) of magnesium sulphate was instilled into the stomach. Following the lavage and instillation, 5 grains (0.3 Gm.) of sodium amytal was given intravenously, with resulting emesis followed by a deep sleep and complete relaxation. The patient was put to bed and slept soundly for about half an hour, awakening at this time in a state of restlessness and moderate excitement, no doubt a manifestation of the sodium amytal. No more spasms were noted but the restlessness continued and about two hours following the administration of the sodium amytal 30 grains (2 Gm.) of chloral hydrate was given by means of a retention enema. The patient slept for the remainder of the day and was not disturbed aside from the administration of a soap suds enema late in the day. The following day he was much stronger but was kept quiet by the use of sodium amytal orally, approximately 12 grain (0.8 Gm.) being required. On the third hospital day the sodium amytal was discontinued and the patient allowed

to rouse. There was some excitement and restlessness, but he ate well and showed no residual symptoms of the poisoning aside from a retention of urine, this no doubt resulting from contraction of the vesical sphincter. The patient was catheterized at two intervals and the following day was able to void. Further recovery from the strychnine poisoning was uneventful.

BRYAN C. FENTON, M.D., Lincoln, Neb.

A DEATH FROM ALPHA-DINITROPHENOL POISONING

To the Editor—At 6 25 p. m., August 27, H. G. was admitted to the Central Emergency Hospital with the complaint that he had taken 5 grains (0.3 Gm.) of alpha-dinitrophenol that morning at 11 50. The patient stated that he was an M.D., a graduate of Vienna, and that he had taken a dose one week before (August 20) without untoward results.

The patient informed Dr. Charles Bennenger, the assistant surgeon, that he had obtained the drug from a physician at a local hospital in order to attempt a reduction in his weight.

Soon after taking the drug at 11 50 a. m., the patient stated that he went for a walk and returned to his rooms soon afterward. About 4 p. m. he began to notice a feeling of apprehension, other than palpitation, he had no definite complaint. He became more restless and uneasy, and finally, about 6 o'clock, requested his hotel to telephone for an ambulance.

On admission he appeared pale, agitated and markedly apprehensive. Physical examination was negative. He was placed in bed, where he complained of being warm and persisted in throwing off the covers. He requested that more windows be opened or that he be taken on the roof for more air. He also complained of severe pain and stated that there was considerable air hunger, without actual dyspnea. Restlessness and apprehension increased, and there was a progressive rise of temperature, with frequency pulse rate and respiration. There was profuse perspiration, the temperature rose to 105.4 F. The pulse on admission had been 84 and increased until 9 30, when it registered 146 beats per minute. The patient lapsed into delirium and coma at 9 45 and died at 10 o'clock. The rectal temperature was taken at this time, and the mercury column registered at the top of the thermometer (110 plus). Within twenty minutes his body was in boardlike heat rigor. The amount of the drug taken was estimated post mortem by an expert at 25 to 5 Gm., which is fifteen times the ordinary dosage.

J. C. GLIGER, M.D., San Francisco

A LARGE GALLSTONE

To the Editor—I removed a gallstone from a woman yesterday which I think is the largest individual gallstone in the country. If there is a larger one please let me know. The stone weight and measurements are weight 2½ ounces (70 Gm.), length, 3 inches (75 cm.), diameter, 1½ inches (4 cm.), circumference, 4½ inches (11.5 cm.). It was greenish gray and firm and was the only stone in the bladder. The size of the gallbladder was 8½ inches (21.5 cm.), diameter, 2 inches (5 cm.).

FRED G. BUSHOLD, M.D., Lawrence, Mass.

COMMENT—Sternberg reported in Aschoff's "Pathologic Anatomy," edition 6 a gallstone 14 cm. across and weighing 200 grains, or 13 Gm. Rankin and McKeith reported a gallstone measuring 69 by 85 cm. Clement found one measuring 2½ by 1¼ inches or 63 by 31 cm. Bennett removed one at operation with a circumference of 5½ inches (14 cm.) and weighing 636 grains (41.3 Gm.). A case was reported in THE JOURNAL by A. L. Russell July 27 1901, page 265. The gallstone in that case measured 5¼ by 4½ inches (14.5 by 11.4 cm.).

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

CHRONIC NEPHRITIS

To the Editor—The following case has proved a puzzle to me as to both classification and etiology. A white woman aged 20 single American first requested advice because of puffiness of the hands and feet, scanty urination and weight gain of 36 pounds (16 kg) in two months drowsiness and inability to concentrate on her duties as a book keeper. The past history is negative except for a gastro-enterostomy performed two years before for peptic ulcer. Convalescence was uneventful and at present the patient is comfortable on a bland diet. Urine examination at the time of operation was negative throughout. The history of the organ systems and the menstrual history are all negative with the exception of a marked constipation dating back to the time of the surgical procedure and for which the patient takes from four to eight compound cathartic pills each night. Physical examination is negative except for pitting edema of the hands the feet and the legs to the knees. There is moderate pruritus. The blood pressure is 135 systolic 90 diastolic. The weight is 149 pounds (67.6 kg). Hemoglobin is 40 per cent. The red blood cells number 4 500 000. Examination of the urine reveals specific gravity, 1.030 albumin negative sugar negative white blood cells negative red blood cells negative hyaline casts + + granular casts + benzidine test negative. The patient refused a blood chemistry examination. On repeated examinations of the urine no trace of albumin has ever been found by any of the standard tests. Casts are constantly present. The edema has been readily controlled by the use of ammonium chloride and a profuse diuresis has followed the use of salyrgan. The weight has been maintained at from 130 to 135 pounds (59 to 61 kg) and the anemia has improved with copper and iron. All of the original complaints and signs reappear as soon as the patient is taken off the diuretics. Specifically what type of nephritis am I dealing with in the absence of albumin and the presence of hyaline and granular casts? Could the constant dosage with compound cathartic pills be an etiologic factor? What is the prognosis? What treatment is indicated? My available literature has furnished no light on these difficulties. Please omit name. M D Ohio

ANSWER—Accepting the statement that there is no disturbance in the heart or the liver to account for the edema, the case is apparently one of chronic nephritis, but the laboratory data, as given, are not sufficient for a complete diagnosis. The edema seems too extensive to be of nutritional origin. The exhaustion, oliguria, edema, moderate elevation of blood pressure (the normal pressure for a woman of 20 is about 110 to 120 systolic about 80 diastolic) and cylindruria suggest chronic glomerular or diffuse nephritis. However, in chronic glomerular nephritis one would expect to see a definite reduction in erythrocytes as well as hemoglobin, and one would not ordinarily expect to find a urinary specific gravity of 1.030. Cases of chronic glomerular nephritis without albuminuria have been recorded but are certainly the exception, patients with chronic glomerular nephritis generally demonstrate on repeated examinations at least slight albuminuria. Albuminuria is expected even more in chronic nephrosis or tubular nephritis. In the absence of erythrocytes, pus cells or a history of renal colic tuberculous or calculous renal disease or pyelonephritis seems unlikely. When polycystic kidneys are present, at least one kidney is generally found to be enlarged. In the various toxic nephroses, albuminuria with or without edema is present. A generalized edema occurring only at the menstrual period, associated with headaches, choked disks and anuria, and in one case completely relieved by injection of the active hormone of the anterior pituitary gland has recently been described (Thomas W A Generalized Edema Occurring Only at Menstrual Period, *abstr THE JOURNAL*, January 7, p 68).

The discrepancy between the low value for hemoglobin and the relatively normal erythrocyte count needs further investigation, and a chemical analysis of blood, preferably its urea content, should be insisted on for adequate diagnosis and treatment. If this is refused, the excretion of phenolsulphonphthalein should be studied. A clinically accurate approximation of nitrogen concentration can be obtained by the determination of the salivary urea index (Hench, P S, and Aldrich Martha A Salivary Index to Renal Function *THE JOURNAL* Dec 15 1923 p 1997). The water and concentration tests also should be done.

If evidence of retention of nitrogen is found a diet containing about 50 Gm of protein should be given, no extra salt being allowed. If the nitrogen retention is marked intake of fluid should not be restricted below 1000 cc in spite of the edema. The use of ammonium chloride might decrease the alkali reserve and ammonium chloride or ammonium nitrate might increase the retention of nitrogen. Administration of potassium nitrate (from 6 to 8 Gm daily) would be preferable and might control

the edema without the use of salyrgan, which should be used cautiously if at all when retention of nitrogen or hematuria is present. The patient's physical activities should be minimal rest in bed probably being desirable to minimize the catabolism of nitrogen. Exposure to cold and fatigue should be avoided. Removal of foci of infection may be important. If there is no retention of nitrogen, restriction of protein is not required indeed may be contraindicated, but restriction of salt and water are indicated.

No definite statement regarding prognosis can be made until the patient has been observed from six to twelve months. If then there is no evidence of progressive renal insufficiency, increase in hypertension alteration in cardiac size and function, or changes in the ocular fundi, the diagnosis of quiescent renal lesion may be justified and a good prognosis given.

It is not likely that the use of compound cathartic tablets is responsible for the condition. These tablets are generally supposed to contain extract of colocynth calomel resin of jalap and gamboge powder. However transient renal irritability with albuminuria, on rare occasions has been ascribed to phenolphthalein used as a laxative (Effects of Phenolphthalein on Kidney *THE JOURNAL*, August 5, p 469).

LEUKORRHEAL DISCHARGE AFTER COITUS

To the Editor—A married woman aged 22 who has been menstruating regularly complains of a leukorrhea lasting from twenty four to forty eight hours following coitus and also each menstruation. There is no leukorrhea then until after the next coitus. The patient has never been pregnant and she has noticed the symptoms since marriage. Vaginal and bimanual examinations reveal no pathologic changes. There is no history of acute gonorrhea in the woman or her husband but the husband developed an acute prostatitis a few weeks following a severe attack of scarlet fever about one year ago. I should like to know whether the leukorrhea is physiologic or indicates a pathologic condition. Please omit name. M D Pennsylvania

ANSWER—A leukorrheal discharge for a few days after the menstrual flow is not uncommon and requires no treatment except when it is due to endocervicitis trichomonas vaginalis or moniliasis. The leukorrhea that follows intercourse in this case is most likely not pathologic. It may be the result of the technique of coitus employed by the couple. For example if the coital act is long drawn out before the orgasm is experienced there is opportunity for marked congestion in the pelvic organs and for a profuse vaginal discharge. This may persist for a day or two after intercourse. Likewise if the woman is aroused sexually and does not have an orgasm because the husband has his orgasm prematurely and discontinues the act a leukorrheal discharge may follow such an occurrence. If the woman is repeatedly aroused and regularly frustrated in her desire to have an orgasm, a leukorrheal discharge may be permanently present. In such cases treatment must be directed at the cause. Local treatment will do no good and may result in harm. A moderately warm tap water douche shortly after intercourse may prove helpful. However, if the discharge is not annoying and the husband and wife are satisfied, no treatment need be instituted.

LOWER ABDOMINAL ANESTHESIA

To the Editor—What is the exact technique of Trzygost's method of lower abdominal anesthesia (*Monatsschr f Geburtsh u Gynak* 90 1928 [Jan 1932])? I don't trust my translating ability. What is your attitude toward the method? Is there a spinal anesthetic on the market that does not depend for its localization on the position of the patient? Somewhere in my reading I have run across some sort of acacia mixture especially adaptable to beginners in spinal anesthesia. Is there such a product and is it on the market?

ROBERT MO FORT M D Wolverine, Mich

ANSWER—The method consists of a paravertebral injection of 30 cc of 0.5 per cent procaine hydrochloride at the height of the third lumbar vertebra. The patient sits on the edge of the table with a curved back. The third lumbar spinous process is located. A dermal wheal is produced four fingerbreadths to the right and left of the spinous process and a 12 cm needle is inserted in the horizontal plane but at 45 degrees toward the midline. After the transverse process is reached the needle slips past the bony resistance and arrives at the lateral surface of the third lumbar vertebra. At this point, after aspiration for blood, an ounce of procaine is deposited on both sides.

The patient is then laid on her back and the abdominal wall is infiltrated layer by layer. The rectus fasci is injected after the incision through the skin and the subcutaneous fat has been made. After the peritoneum is opened and the intestines are gently packed away from 3 to 5 cc of 0.5 per cent procaine is injected into the round ligament and the ovarian or infundibulopelvic ligaments according to the operation planned. Finally from 20 to 30 cc of the anesthetic solution

is deposited between the two layers of the broad ligament into the parametrium. Now the uterus may be grasped and pulled forward. If there is still some sensation of pain on traction, the sacro-uterine ligament may be injected.

The patients are prepared with scopolamine ($\frac{1}{500}$ grain, or 0.0003 Gm.) and morphine ($\frac{1}{4}$ grain, or 0.016 Gm.) two hours and one hour before the operation, or a barbituric sedative is administered.

In approximately 10 per cent of the ninety-one laparotomies a short nitrous oxide anesthesia was added. For vaginal hysterectomies the paravertebral anesthesia is supplemented with a parasacral block or parametrium injections on both sides of the uterus.

It can be readily seen from this description that the method requires considerable skill and experience in various forms of local anesthesia. Professor Frigyesi, who has perfected this combined form of anesthesia during the last fifteen years, is the head of a large gynecologic and obstetric service and has a large group of trained assistants. Under such ideal conditions this lower abdominal anesthesia is feasible and successful, although there were partial failures which had to be supplemented with nitrous oxide in 10 per cent of the cases. For the casual surgeon the method is too complicated and cumbersome. Paravertebral anesthesia is not without danger in the hands of men without special training in this method.

In regard to spinal anesthesia, the surgeon should be thoroughly familiar not only with the technic but also with the physiologic effects, the dangers and the limitations of this method. The monograph of Charles H. Evans (New York, Paul B. Hoeber, 1929) is recommended for study. There is no such thing as spinal anesthesia for beginners. Spinal anesthesia is a valuable method if used with discrimination. Dissolving the procaine crystals in the patient's own spinal fluid seems to be the most desirable procedure. The height of the anesthesia can be governed by various dilutions of the anesthetic and by air insufflation.

RELATION OF PARATHYROID GLANDS TO FORMATION OF RENAL STONE

To the Editor—A patient has passed a number of stones from both kidneys most of these with the usual symptoms of renal colic but on three different occasions a urinary retention with a severe pyelitis has supervened that necessitated major surgery. He has been advised to have roentgen therapy to the parathyroid glands with the idea of diminishing the blood calcium. His calcium content varies from 9 to 10.5 mg. 1. Is there a definite relation between the formation of renal calculi and calcium content in the blood? 2. Would roentgen therapy to the parathyroid gland control the blood calcium? 3. Would such therapy prevent further formation of stones? Please omit name.

M D Illinois

ANSWER—1. We are not aware of any relation of the sort indicated. From the analyses of Kahn and Rosenblum (THE JOURNAL, Dec 21, 1912, p. 2252) and others it would appear that the majority of renal stones are composed mainly of calcium oxalate or phosphate or a mixture of the two. There is evidence associating formation of bladder calculi composed of calcium phosphate with a deficiency of vitamin A. Whether the association is direct, or some other dietary deficiency is involved, is perhaps not satisfactorily settled. The references are Osborne and Mendel (THE JOURNAL, July 7, 1917, p. 32); McCarrison (Brit. M. J. 1, 717 [April 16], 1927); Fujimaki (Japan M. World 6, 29 [Feb.] 1926, abstr. Chemical Abstracts 20, 2694 [Aug. 20], 1926); and THE JOURNAL, June 19, 1926, p. 1946); van Leersum (J. Biol. Chem. 76, 137 [Jan.] 1928).

Of forty-five cases of parathyroidism analyzed with relationship to renal calculi heavy calcium deposit in the urine and milky urine were mentioned twice, fine gravel once and bilateral renal calculi were present seven times. Of Donald Hunter's four classic cases of parathyroid tumors renal calculi were found in three. These figures are in fact higher if the symptom is more often sought. In parathyroidism under the influence of an increased output of parathyroid from the irritated little glands calcium is liberated from the bones in excess. Hypercalcemia follows and this again leads to secondary calcium deposits in the internal organs, ligaments and so on especially it seems in the kidneys. In this way the foundation for renal calculi in hyperparathyroidism is laid. Old cases of parathyroidism therefore are frequently accompanied by stones and secondary pyelitis. A few patients have died even after successful operations for parathyroid tumor from such secondary changes in the kidney. Therefore this is one of the reasons why early operation is indicated if the diagnosis of parathyroid tumor is made.

2. To be sure, in a given case it has to be established whether the patient with symptoms of nephrolithiasis has other symptoms of parathyroidism such as changes in the skeleton, high

serum calcium, increased calcium output in the urine, and hypotonia. If such symptoms are present, parathyroid origin of the kidney stones may be thought of, otherwise, kidney stones may well arise from other causes, such as focal infections.

3. If the diagnosis of parathyroidism is established as a possible cause of the renal disturbance, parathyroidectomy or roentgen treatment of the parathyroid region may be considered. So far the roentgen therapy of parathyroid tumors and hyperplasias has only exceptionally been mentioned as successful. Parathyroidectomy in a well established case is generally preferred to roentgen therapy. The removal of a parathyroid tumor (adenoma or hyperplasia) might prevent further formation of stones. To be sure, the harm done (secondary infections, hydronephrosis and pyonephrosis) needs special attention besides the treatment directed toward the parathyroids.

COSMETIC TREATMENT OF WRINKLES ON FACE

To the Editor—I have a female patient aged 40 whose face is prematurely wrinkled. She has spoken to me regarding a peeling treatment as used in beauty parlors. What are the usual solutions used and what procedure is followed? What can be done with ultraviolet radiation in producing exfoliation in these cases? Kindly omit name.

M D New York

ANSWER—Wrinkling is caused by loss of elasticity of the skin through degeneration of its fibers. No treatment can cure it or restore to the skin its youthful elasticity and smoothness. Slight inflammation causes swelling and temporarily smooths out the wrinkles but with its subsidence they return. Such an inflammation followed by exfoliation, can be caused by ultraviolet radiation by freezing with carbon dioxide snow or by chemical irritants. Of the latter the simplest is a solution of corrosive mercuric chloride in alcohol, 1 per cent, painted on a small area daily and allowed to dry on. After a few to several days of this treatment the skin becomes red when the treatment is stopped and exfoliation awaited. Or the peeling paste used for acne may be used.

	Gm or Cc
Betanaphthol	10
Precipitated sulphur	40
Soft soap U S P	25
Petrolatum	25

If this turns dark it does not indicate any loss of activity. It must not be used in cases in which the kidneys are impaired, and during its use the urine must be watched for signs of kidney irritation. Like the preceding, it must be used on small areas only and not given to the patient to apply, but she must come daily to the doctor for the application.

The area should be washed with ether or benzine and the paste should be spread thickly and allowed to remain from twenty to thirty minutes when it is removed thoroughly. Soon after application a slight burning sensation is felt, but this ceases in a few minutes. After the removal of the paste, the skin is red for a few hours. The treatment should be repeated each day until a tightening sensation or the onset of exfoliation shows that treatment has been sufficient. Five days is usually enough. During treatment no soap or water is to be used on the areas treated but they may be cleansed by 0.5 per cent salicylic acid in alcohol.

Perhaps the beneficial effect may last as long as the time consumed in treatment. Any such inflammation may result in increase of pigmentation. Overtreatment may be distressing. We strongly advise against the attempt to improve wrinkles in this way.

BLOOD SEDIMENTATION TESTS

To the Editor—Will you please supply me with data relative to the sedimentation test as done with a 5 cc. tube giving technic interpretation averages and relative rate that is rapid, moderately rapid and extremely rapid. Also the relation to polymorphonuclear count and to filament count. Please omit name.

M D Wisconsin

ANSWER—The blood sedimentation test referred to is the graphic method of Cutter. A special sedimentation tube of 5 cc. capacity is used which is graduated in tenths of a centimeter, each 1 mm. in height and marked in millimeters. Tubes answering these specifications may be obtained from the A. H. Thomas Company of Philadelphia. In this method the position of the sedimenting column of red cells is recorded every five minutes for one hour. The test is performed as follows: Five cc. of venous blood is aspirated into a carefully cleaned syringe containing 0.5 cc. of freshly prepared 3 per cent sodium citrate solution. When the blood is drawn the barrel of the syringe is drawn backward about 1 cm. and the syringe is gently tilted backward and forward several times to insure uniform mixing of the blood and citrate solution. (If clotting occurs the test must be repeated.) The needle is removed

from the syringe and the contents are poured into the sedimentation tube. The tube is stoppered with a paraffin coated cork and inverted two or three times. The tube is placed in a rack and the position of the column of red blood cells is recorded every five minutes for one hour as it settles down. The observations are recorded on a sedimentation chart on which the horizontal lines represent the divisions of the sedimentation tube and the vertical lines the intervals of time. Printed forms may be obtained from Charles M. Berkemeyer, Sellersville, Pa. The graph serves as a rough estimation of the presence or absence of pathologic activity. The sedimentation index is the total sedimentation of red blood cells at the end of sixty minutes expressed in millimeters. The normal averages vary for men from 3 to 4 mm and for women from 5 to 6 mm. During menstruation it may be as high as 12 mm. It is normally increased in the new-born and the aged. The significant changes occur in the first thirty minutes. In the presence of severe acute inflammation the rate may be extremely rapid and reach from 25 to 30 mm the first thirty minutes, producing what Cutler has termed a vertical curve on the graph.

The mechanism whereby changes occur in the polymorphonuclear and filament count and the sedimentation rate are different. The two examinations supplement each other. The leukocyte count is influenced not only by the disease process but also by the patient's ability to react. A change in the leukocyte count appears before the sedimentation is significantly influenced. The sedimentation rate expresses a condition in the body and not a reaction of the body. For example in severe infections both tests show marked changes. Weeks later the leukocyte count may fall to normal while the sedimentation index will remain high in spite of an obvious clinical improvement. The sedimentation rate indicates more delicately the complete healing of a diseased tissue than does the study of leukocytes. Because of other factors influencing the sedimentation rate, however, conclusions on this test alone are often misleading.

FEVER OF UNKNOWN ORIGIN IN CHILDHOOD

To the Editor—A child now 2½ years old was first seen when 8½ months old. He was brought because of a constantly elevated temperature which had been present for about seven weeks. At the onset the child had loose stools and some vomiting. There was a slight cough. Examination revealed little. The child weighed 18 pounds and 8 ounces (8.4 kg). The temperature was 100.2. There was some postpharyngeal redness. Blood examination revealed red blood cells 5,000,000, hemoglobin 85 per cent, white blood cells 9,500, small lymphocytes 70 per cent, large lymphocytes 5 per cent, neutrophils 23 per cent, monocytes 1 per cent, eosinophils 1 per cent. There were no malarial plasmodia. Urine examination was negative except for a slight amount of sugar which was not present on a subsequent examination. Stool examination was negative. Both a Mantoux and a Pirquet test were negative. The appetite was never more than fair. As the child had not had any cod liver oil but only small amounts of viosterol, I placed him on 10 D cod liver oil and informed the mother that if the fever continued I wanted to have an agglutination test for *Alcaligenes melitensis*. The temperature did drop somewhat instead of running between 100 and 101 as it had been doing it ran between 99 and 100. The child had frequent attacks of an infection of the upper respiratory tract and I pleaded with the mother and father to have a tonsillectomy and adenoidectomy performed, feeling that perhaps a chronic adenoiditis was causing the fever. In April 1931 the family left town and I did not hear any more about the child until March 22, 1933, when they returned. At that time the child had a cold and temperature of 99 and later 103. There was a profuse postnasal discharge. After this attack subsided the family finally consented to have the operation advised earlier. April 10 it was done. Since then the temperature has continued around 100 and 101 and then on some days it is around 99. The child seems to feel well but does not have much of an appetite at any time. I have also had the child take a series of ultraviolet ray treatments. He now weighs 29½ pounds (13.4 kg) and is 37¼ inches (94 cm) tall. Is this a case of idiopathic hyperthermia or what I have sometimes heard called growth hyperthermia? The mother told me that for a period of about one and one-half to two months while they were away he was free of fever. They were in Arkansas during the summer months. I can find nothing wrong with this child and still he has fever. Your opinion will be greatly appreciated.

PAUL R. MEYER, M.D., Port Arthur, Texas

ANSWER—This query brings up the subject of the cause of obscure fever in infancy and childhood. The answer to this frequent and difficult problem can be solved best by an exhaustive process of exclusion. Has he a chronic focus of infection somewhere in the pharynx, nasopharynx, ethmoid sinuses, lymph nodes of the neck, or in the thorax, or within the abdomen? Has he a pulmonary, cardiac or renal infection? Is there a latent rheumatic infection? All of these problems and many similar ones require thoughtful consideration before a functional diagnosis which is loosely covered by the term hyperthermia should be made. Does the fever disappear during rest and reappear during active muscular exercise? In such a case if nothing else is found one may assume that muscular activity and a labile temperature mechanism cause the elevation of temperature.

While these elevations of temperature in infants and young children are disconcerting to parents and physician alike, and while it is the duty of the physician to establish a positive organic diagnosis, if it is humanly possible, nevertheless there remains a group of these children in whom no definite cause can be found and who survive and become normal in spite of the temperature elevation. In these cases thermometry may be discontinued for a time and will not detract from the health of the child and will bring comfort to the mother and peace to the doctor.

ATABRINE—PLASMOCHIN

To the Editor—Advertisement by the manufacturer claims that five days administration of atabrine is sufficient to destroy both schizonts and gametocytes. Other attractive qualities are claimed for this agent. Please inform me whether these claims are true and whether there is any great advantage in its use over quinine. Please discuss plasmodium.

M. D. Illinois

ANSWER—According to information received, Atabrine is a product of the I. G. Farbenindustrie in Elberfeld, Germany, and is proposed as a substitute or for use with "Plasmodium" in the treatment of malaria. It is sold in America by the Winthrop Chemical Company. The product is stated to be the dihydrochloride of a dialkylamino derivative of acridine (alkylamino Alkalium Acridinderivat, Ger.). It is stated that on the basis of laboratory experiments it may be assumed that Atabrine primarily affects the schizont stage of the plasmodium (Schizontenmittel Ger.) and, in contrast with Plasmodium, exerts no action on the gametes of *Plasmodium falciparum*, the causative agent of estivo autumnal malaria. Atabrine has not been accepted for New and Nonofficial Remedies nor has the Winthrop Chemical Company requested consideration by the Council on Pharmacy and Chemistry.

According to the preliminary report of the Council on Pharmacy and Chemistry (THE JOURNAL, July 9, 1927, p. 113), Plasmodium is a synthetic quinoline derivative developed in Germany and proposed for use in the treatment of malaria. For many years attempts have been made to find a substitute for quinine that would be cheaper, less bitter, less toxic and more specific than the natural drug. Plasmodium appears at least to represent a step forward in this search. However, according to von Oettingen (Therapeutic Agents of the Quinoline Group, American Chemical Society Monograph 64, 1933) it "cannot be considered as a substitute for quinine but it seems to be valuable when quinine cannot be used and as adjuvant in the administration of quinine on account of its specific toxicity for gametocytes which are more resistant to quinine than the schizonts. In small doses of 0.018 gram per day it may be a safe prophylactic against the transmission of malaria by mosquitoes."

Plasmodium is marketed by the Winthrop Chemical Company. This firm, however, has not submitted the evidence required to make the product acceptable for New and Nonofficial Remedies.

TREATMENT OF SYPHILIS

To the Editor—I read Queries and Minor Notes with interest and would like your advice in the following case. I have been treating a woman aged 27 for syphilis. Two years ago from another doctor she received five intravenous treatments of nearsphenamine and then had a negative Wassermann reaction. Last fall she developed sores on her hands which I diagnosed as syphilitic and the Wassermann reaction in February 1933 was four plus. Since that time she has received twelve intravenous injections of nearsphenamine and fourteen intramuscular injections of bismuth sodium tartrate 15 per cent. After the injections of bismuth were begun she noticed a tingling and numbness in her lower legs and ankles but I did not connect this with the medication. By July of this year she was having considerable trouble with her feet and wished to discontinue the treatment. She has refused any more treatment until the neuritis leaves her feet. What I should like to know is: What form of treatment should I give her now? Is there anything that can be done to clear up the neuritis? How many more intravenous and intramuscular injections should she have to get a full course of treatment? In May between the courses of nearsphenamine and the bismuth compound I let her rest for two weeks and a Wassermann test taken at that time was negative. Is this worth considering correct when she has had so much treatment? Do you think I would be safe in letting the treatment go and making blood tests periodically? Kindly omit name.

M. D. Pennsylvania

ANSWER—It would seem to be essential in this case to determine more exactly the nature of the neurologic disturbance and particularly its possible relation to neurosyphilis as a form of relapse. The treatment given two years ago was precisely of the type that would invite some serious form of recurrence at about the present time and the Wassermann test on the blood although positive, by no means establishes the nature or

extent of the relapse. The tingling and numbness in the legs and ankles may therefore be an expression of a neurorecurrence or of the continued progression of an uncontrolled neurosyphilis, asymptomatic when the patient was first seen. The proper procedure, therefore, would seem to be a careful clinical examination plus an examination of the spinal fluid, which should be complete and not confined merely to a Wassermann test. Lacking the information these examinations would afford, one proceeds entirely in the dark with the continuance of treatment and the patient may well find herself in a serious situation through her refusal to continue treatment, or the physician may be embarrassed by complications which a more careful examination could have prevented. Under no circumstances should the matter be allowed to rest in its present state or the problem evaded simply by the repeated taking of blood tests.

SENSITIVITIES TO DUST AND CHANGES IN TEMPERATURE

To the Editor—A man aged 42 suffers with frequent attacks of coryza, sneezing, lacrimation, itching of the nasal mucous membranes with watery discharge, fullness and pressure in the head, sweating of the head and scalp and sensations of cold and chilliness. He conducts a small grocery store and when he goes into the refrigerator or is in a draft the condition becomes worse. It has existed about four years and is more severe in winter than in summer. The symptoms are quite typical of hay fever but apparently the sensitivity is due to some substance to which he is continually more or less exposed. I would appreciate your suggestions and the general results expected by desensitization if the offending substance is identified by skin test. Kindly omit name.

M D Connecticut

ANSWER—The patient in all probability is sensitive to the dust in the store. This dust should be collected, the dust that is tracked into the store from the outside being avoided as much as possible. It should be collected from behind the counters under the counters and from the walls with an electrical whisk broom. The dust should be extracted in as concentrated a solution as possible, filtered through stone and diluted down serially. It can be used for diagnosis and therapy (Cooke, R A. Studies in Specific Hypersensitivity. *New Etiologic Factors in Bronchial Asthma*, *J Immunol* 7:147 [March] 1922).

He is probably in addition sensitive to heat and effort or to cold. One cannot determine which from the history but specific methods of testing can be carried out (Duke, W W. Clinical Manifestations of Heat and Effort Sensitivity and Cold Sensitivity [Relationship to Heat Prostration, Effort Syndrome, Asthma, Urticaria, Dermatoses, Noninfectious Coryza and Infections], *J Allergy* 3:257 [March] 1932).

DOSAGE OF HEXYLRESORCINOL AS ANTHELMINTIC

To the Editor—I notice an answer to a correspondent in regard to the use of hexylresorcinol as an anthelmintic. In answer you give the dose as 0.1 Gm for each year of age up to 1 Gm. Now the only form of this drug with which I am familiar is Sharp and Dohme's Hexylresorcinol Solution S T 37. I consulted Dorland's Medical Dictionary and find the following: Hexylresorcinol. A white waxy stable solid. It is a powerful germicide with a phenol coefficient of 46. Dose 2½ to 10 minims (0.15 to 0.6 cc) three times a day. This bewilders me giving the dose of a solid in minims. Please set me right in regard to this. Please omit name.

M D, Iowa

ANSWER—Some solids are customarily measured by volume rather than weight, such as wheat and corn, but it would seem a bit awkward to measure out minims doses of the solid hexylresorcinol. The dosage of 0.1 Gm up to 1 Gm of crystalline hexylresorcinol for 1 year of age is an effective anthelmintic dose against ascaris and hookworm.

Tetrachlorethylene is in all probability as effective as carbon tetrachloride and theoretically, is decidedly preferable on account of causing no liver damage or any other intoxication that has been discovered. Clinically, it seems to be as effective as carbon tetrachloride and as far as we have been able to determine has produced no true intoxication. Like any anesthetic when taken by mouth it may cause slight temporary giddiness which should not be considered an intoxication. The only contraindication known against its use is in cases of mixed intoxication in which both ascaris and hookworm are present in which condition it may cause migration of ascaris with complication.

Hexylresorcinol has been found to be extremely effective against ascaris (reductions of 95 per cent or over having been obtained). It is less effective against hookworm but in the treatment of large numbers of cases an average reduction of 75 per cent in egg counts may be expected while better results have been obtained in carefully controlled cases.

INDUSTRIAL HAZARD FROM LACQUER USED IN MAKING ARTIFICIAL FISH BAIT

To the Editor—I have a young woman patient who works in an artificial fish bait factory where a great deal of Dupont lacquer is used in painting the bait. She continually has a severe rhinitis with the membranes of the nose practically closing the air passages. When she is away from the factory a few days she has no trouble so I feel that it is from the lacquer. Do you have any experience in what to do for this condition?

C PHILIP FOX, M D Garrett, Ind

ANSWER—The condition described may occur in certain individuals, especially if the solvent vapors are too concentrated in the workroom and if the person concerned has enlarged turbinates. Occasionally individuals react to solvent vapors, manifesting symptoms such as nausea, eye irritations and skin irritations, and the other persons employed in the same room show no reaction whatever. In some cases it is necessary to remove these individuals from this type of work.

If ventilation is not adequate to carry away the solvent vapors, steps should be taken to make improvements along this line. If the individual is the only one among a group working under the same conditions who is suffering from this irritation, it may be necessary to remove her from this type of work. If she has hypertrophied turbinates, possibly their removal will help to clear up the situation.

EFFECTS OF RADIATION ON PRODUCING ABORTION

To the Editor—I have a patient a woman aged 38 who had a rectal pruritus and was given at weekly intervals unfiltered x-ray treatments for a period of one minute for three treatments with the tube some 6 inches from the skin. No lead protection was used. About the time she reported for the first treatment of x-rays to the dermatologist she missed a menstrual period and showed some breast changes of pregnancy. About one week after the last x-ray exposure she commenced having uterine pains and passed some decidua. Did the x-ray exposure have anything to do with this abortion in your opinion? I do not know the voltage or milliamperage used in the treatment. I am not asking this question because there are any medicolegal questions involved but purely for information.

EARL B GERLACH M D Huntington, W Va

ANSWER—From 50 to 60 per cent of a skin unit dose has been found to be a little above the castration dose. This amount of exposure to x-rays results in abortion. It is possible to induce abortion by administering less than the castration dose. Without a knowledge of the voltage and amperage, it is impossible to estimate the dose of radiation administered in this case.

IMMUNIZATION OF CHILDREN

To the Editor—With the increasing number of biologicals offered for conferring immunities the problem of which and when to administer becomes confusing. Kindly give me as nearly as possible the ideal schedule for the average child without overdoing it. In other words when and what immunizing administration should every child have to secure adequate protection without running unnecessary risks of anaphylaxis? Please omit name.

M D, Georgia

ANSWER—Every child should be vaccinated against smallpox and immunized against diphtheria. The child should be vaccinated against smallpox early in life. It has been shown that the earlier the vaccination is done, the less severe is the reaction and the less danger of complications. After the child has been successfully vaccinated against smallpox, he should be immunized against diphtheria. This may be done any time after the sixth month of life. Diphtheria toxoid, which contains no animal serum and consequently eliminates sensitization, is in common use. For children over 4 years of age toxoid antitoxin, prepared with goat or sheep serum, is preferred by many physicians because of the less severe local reaction.

Whether other immunizing agents should be given in the routine manner is still a question. In the presence of an epidemic, the appropriate immunizing agent should certainly be given.

EFFECTS OF IODIDE ON NASAL MUCOSA

To the Editor—Kindly send me information regarding the pharmacology of potassium iodide in large and in small continued doses over a long period of time on the nasal mucosa. Kindly omit name.

M D Chicago

ANSWER—There is not a doubt that some of the iodide is eliminated by the nasal mucosa and also that such elimination may occur without any obvious phenomena whether large or small doses are consumed and for a long time. On the other hand the symptoms of iodism may appear even after small doses given for a short time. Indeed they seem to occur more commonly after small doses given at short intervals during the day than after large doses given less frequently and after meals. The symptoms consist of a catarrhal inflammation of the nose.

and adjoining mucous membranes with swelling, softness and sponginess of the mucosa and profuse secretion, accompanied by sneezing, a burning sensation in the nose, and a sense of occlusion and oppression. There may be a loss of smell, and frontal or maxillary sinus pain. The symptoms disappear shortly after the suspension of the drug. It is probable that previous diseases of the nasal mucosa cause these symptoms to appear earlier and more intensely than is the case with normal mucosa.

SKIN ERUPTIONS AFTER PHENOBARBITAL

To the Editor—A patient presented himself to my office a few days ago to consult me concerning a peculiar eruption resembling psoriasis. The history of his case shows that he has had epilepsy for fifteen years and has been taking $1\frac{1}{2}$ grains (0.1 Gm.) of phenobarbital three times a day ($4\frac{1}{2}$ grains or 0.3 Gm. daily) for a period of fifteen years. I am interested to know whether the long continued use of phenobarbital will produce skin manifestations. This patient has been suffering intermittently from this skin condition for a period of nine months. The character of the lesions and the distribution do not conform to any of the common skin diseases with which I am familiar. Therefore I am led to believe that the drug might be the cause of his condition. Please advise me.

M D Rhode Island

ANSWER—Phenobarbital (luminal) is well known to have a tendency to produce eruptions of various kinds and it is entirely within the range of probability that the eruption may be due to it. The test of temporary discontinuance of the medicine and its resumption after the disappearance of the eruption will provide definite proof.

POSITION OF MOTHER WHILE NURSING BABY

To the Editor—What if any are the reasons for requiring a young mother each time she suckles her baby 6 weeks of age to do so lying down in other word go to bed? This mother made a good recovery and has been up and around several weeks feeling fine. The only reason she herself can give is that she is following Dr Bunde's book.

JOHN B MILLER M D Long Beach Michigan City Ind

ANSWER—There is no special reason why a woman should lie down either on a bed or on a couch to nurse her baby. In fact, it is better for her to sit up although it does not matter much whether she lies down or sits up, so long as she is comfortable. It is wise to warn the young mother not to look at the baby constantly while the latter is at the breast, because this not only strains the eyes of the mother and occasionally produces headaches but it also strains the muscles of the neck and back, which likewise may become the seat of pain.

MUSCULAR DYSTROPHY

To the Editor—Please outline treatment if any for pseudohypertrophic muscular atrophy in a boy aged 10 years. Please omit name.

M D Canada

ANSWER—There are two rather new methods of treating muscular dystrophy. 1 By hypodermic injections of epinephrine and pilocarpine on alternating days, 0.2 cc of 1 per cent solution of each this is based on the not generally accepted theories of Ken Kure. 2 Glycine (glycocoll gelatin sugar) from 10 to 30 Gm daily by mouth. This treatment, proposed by the German physiologist Karl Thomas, has been tried at the Mayo Clinic with rather indifferent results (*Proc Staff Meet, Mayo Clin* 7 557 [Sept 28], 737 [Dec 28] 1932).

POLIOMYELITIS

To the Editor—In this community there is a mild epidemic of acute anterior poliomyelitis. Please advise on the following: 1 Is there any serum that has shown good results? 2 Is immune serum a proper treatment and should it be given early? Please omit name.

M D Pennsylvania

ANSWER—1 There is no commercial serum available with established curative action in epidemic poliomyelitis.

2 If by 'immune serum' is meant the serum from persons who have had the disease—convalescent serum—the answer is that it is quite in order to inject such serum the earlier the better. While opinion is divided as to the results of treatment with convalescent serum, its use seems logical and harmless.

TOXICITY OF HYDRAZOIC ACID

To the Editor—In your answer to Dr Cote (*THE JOURNAL* August 12 p 546) you give some references to work on the toxicity of hydrazoic acid. It is of interest to note that a full investigation of the toxicity of this acid was made by Letchworth Smith and myself thirty years ago in the Chemical Laboratory of Cornell Medical College New York. The results of this investigation were published in the *Journal of Medical Research* under the title 'The Physiological Action of Azonimid' volume XII No 4 1904 pages 431 to 473.

C G L WOLF M D

John Bonnett Memorial Laboratory Addenbrookes Hospital
Cambridge England

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICA BOARD OF DERMATOLOGY AND SYPHILOLOGY Written (Gr B Candidates) The examinations will be held in various cities of the United States and Canada Dec 9 Application necessary before Nov 1
Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Written (Gr B Candidates) The examinations will be held in various cities of the United States and Canada Dec 9 Application necessary before Nov 1
Sec Dr William H Wilder 122 S Michigan Blvd Chicago
AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha
AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha
ARIZONA Basic Science Little Rock Nov 6 Sec Mr Louis E Cebauer 701 Main St Little Rock Regular Little Rock Nov 14 Sec Dr A S Buchanan Tre cott Homeopathic Little Rock Nov 14 Sec Dr Allison A Pringle Eureka Springs Eclectic Little Rock Nov 14 Sec Dr L L Marshall 401 W 3d St Little Rock
CALIFORNIA Reciprocity Los Angeles Dec 6 Sec Dr Charles B Pinkham 420 State Office Bldg Sacramento
CONNECTICUT Regular Hartford Nov 14 Sec Dr Edwin C M Hall 82 Grand Ave New Haven
FLORIDA Jacksonville Nov 13 14 Sec Dr William M Rowlett Box 786 Tampa
KENTUCKY Louisville Dec 5 7 Sec Dr A T McCormack 31 W Main St Louisville
MAINE Portland Nov 14 15 Sec Dr Adam P Leighton Jr 192 State St Portland
MASSACHUSETTS Boston Nov 14 16 Sec Dr Stephen Rummere 144 State House Boston
NATIONAL BOARD OF MEDICAL EXAMINERS The examinations will be held at centers in the United States where there are five or more candidates Feb 14 16 Ex Sec Mr Everett S Elwood, 223 S 15th St Philadelphia
NEBRASKA Lincoln Nov 22 24 Director Bureau of Examining Boards Mrs Chas Perkins State House Lincoln
NEVADA Carson City Nov 6 Sec Dr Edward E Hamer, Carson City
NORTH CAROLINA Raleigh Dec 4 Sec Dr B J Lawrence 503 Professional Bldg Raleigh
OHIO Columbus Dec 6 8 Sec Dr H M Platter 21 W Broad St Columbus
SOUTH CAROLINA Nov 14 Sec Dr A Earle Boozer 503 Salisbury Ave Columbia
WEST VIRGINIA Morgantown Nov 16 18 State Health Commissioner Dr Arthur E McClue Charleston

South Carolina June Report

Dr A Earle Boozer, secretary State Board of Medical Examiners of South Carolina, reports the written examination held in Columbia, June 27-29, 1933. The examination included 70 questions. An average of 75 per cent was required to pass. Thirty-five candidates were examined all of whom passed. Two physicians were licensed by reciprocity and one physician was licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine	(1931)	83.1	
Emory University School of Medicine	(1932)	77	
University of Maryland School of Medicine and College of Physicians and Surgeons	(1933)	81.8	
Jefferson Medical College of Philadelphia	(1929)	83	
Medical College of the State of South Carolina	(1933)	79.1	
81.4 81.5 81.8 82.1 82.3 82.6 82.6 82.8 83.0 84.1 84.4 84.6 85.3 85.4 85.4 86.4 86.4 87.4 87.5 87.8 88.1 88.3 89.3 89.6 90.3 92.3			
Meharry Medical College	(1932)	75	79.3

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Western Pennsylvania Medical College	(1931)	Penn	
Medical College of Virginia	(1929)	N Carolina	

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Columbia University College of Phys and Surgs	(1930)	N B M Ex	

District of Columbia July Examination

Dr W C Fowler secretary, Commission on Licensure, reports the written examination held in Washington, July 10 11, 1933. The examination included 60 questions. An average of 75 per cent was required to pass. Twenty-two candidates were examined all of whom passed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1931)	83.6	
George Washington University School of Medicine	(1931)	84.5	
84.6 (1932) 81.3 82.9 85.5 85.6 86.6 87.3 88.1, 91			

Georgetown University School of Medicine	(1932)	83 7
85 4 86 3 88 3 88 9		
Howard University College of Medicine	(1932)	85 9
Medical College of Virginia	(1932)	88 3
University of Virginia Department of Medicine	(1929)	84 7
(1930) 87 2 (1932) 85 7		
Magyar Királyi Pazmany Petrus Tudomanyegyetem		
Orvosi Fakultasa Budapest	(1895)*	79 1

Eleven physicians were licensed by reciprocity from January 28 to August 12. The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Howard University College of Medicine		(1928)	Virginia
(1929) Kansas, Virginia 2 (1930) Maryland			
College of Physicians and Surgeons of Baltimore		(1908)	Maryland
University of Michigan Medical School		(1929)	Michigan
Columbia Univ. College of Physicians and Surgeons		(1909)	Montana
Syracuse University College of Medicine		(1920)	New York
Hahnemann Med. College and Hosp. of Philadelphia		(1906)	Penna.
University of Virginia Department of Medicine		(1929)	Virginia
*Verification of graduation in process. License withheld pending inspection of diploma.			

Book Notices

Light Therapy By Frank Hammond Krusen M.D. Director of the Department of Physical Medicine Temple University School of Medicine Philadelphia. Foreword by John A. Kolmer M.D. Dr. P.H. D.Sc. Professor of Medicine Temple University School of Medicine. Cloth. Price \$3.50. Pp. 186 with 33 illustrations. New York: Paul B. Hoeber Inc. 1933.

Succeeding ages have practiced light therapy in accordance with limited experience, out of which arose unorthodox opinions and a literature based on empiricism. Modern biologic sciences have sought and attained concrete evidence of the therapeutic efficacy of light, as evidenced by the recent literature which formulates opinions on the basis of controllable facts. The aim of this book is to differentiate facts from current fallacies and to present a serviceable technic for the employment of various agencies used in light therapy. The author has drawn on authoritative sources to such a proportion that the work impresses one as a commentary rather than an exposition based on his personal experience. A characteristic amounting to self effacement. Theory is weighed against fact, physics is correlated with physiology and clinical results are shown to be dependent on biophysical factors. Separate chapters have been devoted to a review and an analysis of the physical and physiologic properties of light, the author defining the source and nature of light energy and concisely discussing its methods and technics of administration with its dangers, limitations and indications. While the work offers a satisfactory evaluation of light therapy, embracing a range from infra-red to ultra-violet, its value would have been enhanced had the author included the recent conclusions of the Council on Physical Therapy. Perhaps certain minor shortcomings, for example, the misinterpretation of the effects of the so-called cold quartz rays on vitamin D are due to the completion of the book prior to the Council's announcement. On the whole the book is a timely and practical contribution which may be accepted by general practitioners as a safe guide in light therapy.

Stop That Smoke! By Henry Obermeyer. Cloth. Price \$2.50. Pp. 259 with illustration. New York & London: Harper & Brothers. 1933.

Smog, the combination of smoke and fog is indicted, convicted and sentenced in this book for one of the high crimes and misdemeanors of the century. Destroyer of buildings, polluter of the air, robber of ultraviolet, foe of economy, thief of light—all these is smog. The book is a lengthy compilation of facts which all know more or less, though perhaps not in terms of the figures which the author quotes until their reiteration grows tiresome and the mind unused to thinking in terms of billions wearily slides over them with a simple realization that they are enormous which is after all perhaps all that is necessary. Little progress has been made in smoke abatement as compared with what has been done for the purification of the water supply; the author points out probably because smoke damage is invidious and not spectacular as may be the outbreak of epidemic water borne disease. He makes a plea with the error of a crusader for elimination of smoke as an economic and public health menace with preservation of a civic art treasures and a decreasing destruction from

exposure to smoke and other esthetic values as by-products scarcely less valuable than the central motives. He overlooks no possible interest or motive to which he might appeal. Near the end of the book are some practical chapters about how smoke abatement can be accomplished, from the great factory to the home furnace. Except that it might have been much briefer, this is a good and useful book which will probably, human nature being what it is, have much less of a salutary influence than it ought to have.

L'héliothérapie Par le Docteur Henri Dausset, chef du service central de physiothérapie de l'Hôtel Dieu. IV. Actinothérapie. I. Papier. Price 15 francs. Pp. 115. Paris: Gruthier Villars & Cie. 1932.

This small volume is a condensed discussion of the clinical value of heliotherapy, being one of three dealing with actino-therapy. It discusses in six chapters the therapeutic application of heliotherapy in selected conditions on the basis of its physiologic effects. Beginning with a brief review of the physical nature of the solar spectrum, the book takes up the theories of light and radiation, the effect of light absorption by various atmospheric filters, and the methods used for its detection and measurement. These physical expositions are followed by a consideration of the technic utilized by the author and other authorities in various disorders, with particular reference to the combined values of open air and sunlight and their photochemical and physical properties influencing living organisms. Nudism is accepted by the author as a physiologic means of securing the full benefit of open air and sunshine and rejected as a fad with pornographic coloring. The author cites for this view the opinions of Viard, Mongeot, de Pathout, de Vachet and others to the effect that, when sanely employed, nudism will benefit the individual and the race. One of the most informative chapters is concerned with a discussion of how heliotherapy works. It deals with the mode of action and physiologic effect of sunlight and open air as related to various organs of the body. Attention is directed to the influence of cosmic rays, the so-called delta rays of Millikan. The author introduces the speculative thought that these deeply penetrating rays may have a powerful although an inexplicable physiologic effect. He feels that in the light of recent studies by Professor Piccard in connection with his research in the stratosphere, there is promise of new experience of value to the biologic sciences. The remainder of the book is devoted to the interpretation of the clinical effect of heliotherapy, a part of which considers irradiation of food material. The book has successfully presented virtually the entire problem of heliotherapy in a condensed form in accordance with the latest opinions on the subject.

Workmen's Compensation: Its Medical Aspect By Sir John Collie CMG D.L. M.D. Consulting Medical Officer to the Ministry of Pensions. Cloth. Temporary price \$2.25. Pp. 160. Baltimore: William Wood & Company. 1933.

All those who are in any way associated with the administration of the medical phases of workmen's compensation in the United States will welcome this volume, which deals with the workmen's compensation acts of England in a thorough and convincing manner. The author presents in a lucid style and a concise form the growth of compensation and the legal and medical aspects of the medical phases of compensation as they have been modified from time to time. In his discussion of the growth of compensation he says:

It is thirty six years since the first Act was passed and it may be opportune now to envisage the present position which certainly affords material for reflection. It was calculated by the Home Office in affording information as to the probable effect of the passing of the Act of 1897 that 150,000 accidents a year would fall within its scope. In the even principal industries for which accurate statistics are obtainable the number of cases of accident in which compensation under the present Act was paid in 1930 amounted to 461,137 in addition there were 2,303 uninsured employers who reported that they were paying compensation in respect of accidents sustained by their employees.

He makes the further comment:

It is to be hoped that the limit to which compensation is applicable has now been reached and that any future legislation will tend to be restrictive although one realizes it is easier to give than to take away what has once been given.

It is significant that such statements might easily have been made about workmen's compensation in the United States. An excellent chapter, with illustrations taken from court rulings,

is devoted to the subject "What is an accident?" The discussion in the chapters on the law and medical examination and the law with regard to operations is well supplemented by quotations from court decisions. One chapter is devoted to the consideration of the position consequent on complete or partial recovery, and another sets forth the conditions surrounding return to work. Although the reader must always be conscious that the author is discussing workmen's compensation as it is operated in England, there is much of value in the principles enunciated. The author has treated a dry and complex subject in a delightfully entertaining manner.

Hints to the Young Practitioner By G. Francis Smith M.R.C.S. J.R.C.I. Consulting Surgeon, Peace Memorial Hospital, Watford. Cloth. Price \$1.50. Pp. 150. New York & London: Oxford University Press, 1932.

This book, written for the young practitioner by a British colleague of considerable experience, is planned to make easier the way of the young man, exactly as the preceptor of the past did for the young apprentice. He therefore advises the young man in the selection of a practice, the features of general practice, the problems that arise in relationship to difficult cases, venereal diseases, conjugal relations, and the care of children. He discusses medical societies and hospitals, financial matters, vacations, and particularly the relationship of the physician to panel practice as it has developed in England. To an intelligent reader it seems that much of what the author writes ought to be guessed at by any other intelligent man, but in his presentation this author is exceedingly interesting, particularly because he recites cases from his own practice to illustrate his points. In his conclusions he suggests that too much civilization is responsible for most of the troubles that have come to the physician, and that part of his duty is to overcome these extraordinary refinements.

Melioidosis By A. T. Stanton C.M.G. M.D. F.R.C.P. Chief Medical Adviser to the Secretary of State for the Colonies and William Fletcher M.D. M.R.C.P. Studies from the Institute for Medical Research, Federated Malay States No. 21. Cloth. Pp. 59 with 37 illustrations. London: John Bale Sons & Danielsson Ltd, 1932.

This monograph consists chiefly of observations made in the Malay States over a number of years on the disease called melioidosis. It is a rare but deadly disease of man and animals, being found chiefly in rodents. Eighty-three human cases have been reported, all except two of which were fatal. They occurred in Burma, Malaya, French Indo-China and Ceylon. The authors believe it to be a more common disease than usually supposed. It is known to attack animals in the Malay States, Ceylon and the Dutch East Indies. In Kuala Lumpur it has been found in guinea pigs, rabbits, rats, cats, dogs, and once in a horse. Owing to the fact that almost any part of the body may be attacked, there are no cardinal symptoms on which a diagnosis may be made. The causative organism, *Bacillus whittmori*, a member of the *Pseudomonas*, must be isolated before the true nature of the disease may be known. Infections of great virulence have a sudden onset and may resemble cholera, and in the septicemic cases death has occurred within the first seventy-two hours. When the initial infection is less virulent the disease may resemble plague, malaria, typhoid, liver abscess, infective endocarditis or general tuberculosis. *Bacillus whittmori* is easily cultivable on all common laboratory mediums, one of its chief cultural characteristics is its growth on 5 per cent glycerin agar. On this medium growth is rapid and within forty-eight hours the colonies take on a characteristic wrinkled appearance resembling the surface of a mold. While *Bacillus whittmori* is closely related to *Bacillus mallei* serologically and immunologically, it can be distinguished from the latter organism chiefly by its motility in young cultures and its corrugated appearance on glycerin agar. The organism is highly resistant outside the body, being able to resist drying and to live in water for comparatively long periods. It is sensitive to heat and the action of ordinary disinfectants. Little is known about its method of dissemination. There is no evidence of direct infection from man to man and the authors believe that infection probably takes place through the consumption of food contaminated with the feces of rodents. The illustrations portray clearly the various aspects of the disease in man and in animals and also the appearances of the colonies of the organism when grown on various mediums.

Acidosis and Alkalosis By Stanley Graham M.D. F.F.P.S. Leonard Cow, Lecturer on the Medical Diseases of Infancy and Childhood, University of Glasgow, and Noah Morris M.D. B.Sc. D.P.H. Lecturer in Biochemistry, University of Glasgow. Cloth. Temporary price \$2.50. Pp. 203 with 23 illustrations. Baltimore: William Wood & Company, 1933.

This small book fulfils the purpose, stated in the preface, 'to give a general survey of the subject and its application to disease keeping in mind the needs of those not versed in recent chemical physiology.' The introduction offers a simple explanation of the acid-base equilibrium of the body and is followed by an elucidation of the reaction of the blood. Van Slyke's classification of disturbances of acid-base balance is explained and is followed by Hildreth's classification. The body defenses against alkalosis and acidosis are detailed together with methods for their determination. The last two thirds of the book is occupied with an application of chemical physiology to clinical medicine. The essential chemical features of diabetes, nephritis, gastro-enteritis, cyclic vomiting, ketosis, salicylate poisoning, anesthesia, acidosis, tetany and pyloric stenosis are presented and logical methods of treatment are suggested.

The Practitioners Library of Medicine and Surgery, Volume IV, Non-traumatic Surgery [George Blumer, Supervising editor; Associate editor, Theodore S. Morse Jr. B.A. M.D. Surgeon to the Eastern Maine General Hospital, Bangor. Cloth. Price \$10. Pp. 1146 with illustrations. New York & London: D. Appleton & Company, 1933.

In this complete system of medicine and surgery, non-traumatic surgical conditions have been separated from the traumatic. Hence this volume is concerned with lesions of the skin and subcutaneous tissues, tumors, diseases of the breast, surgery of the neck, diseases of the thyroid gland, surgery of the brain and spinal cord and of the peripheral nervous system, surgery of the heart, the blood vessels and the chest, also of the gastro-intestinal tract as a whole, the lymphatics, the spleen, hernia, bones and joints, the urinary tract and the genitalia. There are some hundreds of illustrations which have been well chosen. The vast amount of material included in the book makes it almost an outline rather than an extended consideration of any single subject. Nevertheless it provides much immediate practical information, especially for general practitioners who may be considered primarily users of a book of this character. There are extensive considerations of technique, with illustrations taken in many instances from other works. However, many of the pictures seem to have been made especially for this volume. The authors have been chosen because of previous contributions on the subjects they discuss. It is interesting that the majority of the authors are not the professors of surgery whose names are most frequently found in medical periodical literature but in most instances associates, instructors, and assistants in various surgical departments. On the whole, they have done their work well, so that the book constitutes a most useful reference. The vast majority of general practitioners will, of course, be most interested in those sections dealing with hernia, infections and the bones and joints rather than with the intimate details of surgery of the brain and spinal cord. The volume has an excellent index, which adds also to its usefulness.

Die Bruchoperation nach Bassini Von Doktor Attilio Catterina, o. o. Professor der chirurgischen Operationslehre an der kgl. Universität in Genua. Cloth. Price 12 marks. Pp. 56 with 16 illustrations. Von Valer Horatius Galger, Berlin: Urban & Schwarzenberg, 1933.

This is limited to a detailed description of the Bassini operation for inguinal hernia, with colored illustrations showing the surgical anatomy and technique of each step. The author was an assistant to Bassini and dedicates the volume to his master and states that, since Bassini first described his operation, more than forty years ago, numerous modifications have been suggested by various surgeons. Some of these have been advanced as new operations and some have ignored the fundamental purpose of the original operation and consequently have been to its discredit. Surgeons, in general, are not carrying out all the steps of the operation in accordance with the technique suggested by Bassini. This is partly at least, due to the fact that Bassini in his original contribution (strangely enough the exact reference appears nowhere in the volume) was too brief in his exposition and the illustrations, while excellent, were too few and were limited to the purely anatomic part of the operation. Perhaps for this reason, too, the details of the operative technique

as described in the modern works on surgery differ greatly from Bassini's. The author, as a student of Bassini's, presents this new volume to correct these errors. He describes the operation step by step illustrating each with a full-page colored drawing. These drawings are unusually good, show the field life size, and greatly enhance the detailed written description of each step. The last thirteen pages of the book discuss the treatment of special complications encountered during the operation, as hernia and hydrocele, hernia and varicocele, inflammations of the testicle, particularly tuberculosis, tumors of the testicle, special disorders of the hernial sac, as tuberculosis, echinococcus, tumors and foreign bodies in the hernial sac, hernia and undescended testis, special and rare types of hernia, as hernia of the bladder, supravesical hernia, intra-parietal and interstitial inguinal hernia, inguinopropertitoneal hernia and sliding hernia, and injury to the ductus deferens. It ends with a discussion of late recurrence and its treatment. The book is unique, interesting and valuable for both the beginner in surgery and the experienced surgeon.

Some Factors in the Localisation of Disease in the Body By Harold Burrows CBE FRCS Assistant at the Research Institute of the Cancer Hospital (Free) Cloth Price \$4.50 Pp 299 with 8 illustrations Baltimore William Wood & Company 1932

The author has collected in this interesting volume the various factors that have to do with the permeability of the blood vessels and tissues. The book is divided into three parts. The first part is concerned with the permeability of the capillary endothelium to various soluble and insoluble substances and dyestuffs under different conditions, followed by an account of the penetration and localization of the common bacteria and viruses. The second part deals with the relation of such permeability and localization to various disease processes and inflammations. The third part discusses the practical importance of the factors described and their importance in the understanding of infections and tumor metastases. Valuable therapeutic suggestions are given.

Material Medica Pharmacology and Therapeutics By Maude B. Muse B.A. M. Assistant Professor in Nursing Education at Teachers College Columbia University Cloth Price \$2.75 Pp 627 with 71 illustrations Philadelphia & London W. B. Saunders Company 1933

If there is such a thing as a book being 'too good' for the purpose for which it is intended the present one is an example. A good textbook for a review course for a medical student, it seems hardly the book for a nurse. Quite a bit of it—that portion referring to experimental pharmacodynamics—might have been deleted or printed in small type for optional reading, with considerable improvement in its value as a textbook for nurses. The fact that the nurse does not need the same kind of instruction as the doctor seems to have been overlooked by the author. That portion on the other hand, devoted to physical therapy and psychotherapy, even though richer than most other books for nurses, might well have been considerably enlarged and a chapter on occupational therapy added.

Epidemiological Study of Scarlet Fever in England and Wales Since 1900 By Hilda M. Woods Medical Research Council Special Report Series No. 140 Paper Price 1s 3d Pp 61 with illustrations London His Majesty's Stationery Office 1933

This pamphlet is an account of the study of the statistics on scarlet fever and its spread in the last thirty years. Many interesting facts are brought out particularly the relation of the spread of the disease to conditions such as to crowding, also the failure of the control of the disease by means of isolation. Interesting comparisons are made of the mortality figures present and past. The study is complete and is of especial interest to epidemiologists.

Social Problems and Social Processes Selected Papers from the Proceedings of the American Sociological Society 1932 Edited by Emory S. Bogardus Cloth Price \$1.50 Pp 144 Chicago University of Chicago Press 1933

This volume makes available the selected papers from the proceedings of the American Sociological Society for 1932. It discusses the effects on various classes of the social processes now going on including the rural groups, Negroes, Chinese, Russians and Asiatics. There is also a general discussion of the nature of social processes and their analysis.

The Health School on Wheels By J. Mace Address Ph.D. and I. H. Goldberger M.D. Assistant Director of Health Education New York City Public Schools The Story Series in Health Cloth Price 80 cents Pp 399 with illustrations Boston & London Ginn & Company 1933

This book is intended for the sixth grade child. It takes the sixth graders on sightseeing tours, of which there are twenty-six. In these tours various health subjects are considered, such as water supply, markets, restaurants, barber shops, factories, mosquito breeding places, recreation centers and schools. It gives consideration also to first aid, fire fighting, noise, housing, country vacations, and milk. The information presented is authentic, the style is bright and interesting. Contrasts are offered between pioneer days and today. Illustrations are frequent and satisfactory. The tours are followed by questions and also by useful lists of new words which have been learned on that particular trip. Interesting bits such as the fact that Abraham Lincoln was the first president of the United States "to splash his way to cleanliness in a White House bath tub" enliven the text, intrigue the interest and make the dull subject of health palatable to the inquiring youngster. There is a good glossary and index. Suggestions to the teacher for weighing-measuring are up to date. No height-weight tables are given, but instead a chart is published on which the child's progress in height and weight can be recorded, thus substituting progress in the child's own growth as a criterion for the now discredited comparison with height-weight standards of the group. Not only is this an excellent textbook for sixth graders, but, in communities where the schools do not use it, physicians should find it useful to recommend to parents as a health book to put into the hands of youngsters.

Thérapeutique médicale VI Cœur et sang Par M. Loeper avec la collaboration de MM. A. Lemaire, E. Douzelot, Ch. Aubertin, A. Clère, G. Marchal, R. Bolgey, M. Mouquin, P. Emile Weil et A. Tzanck Paper Price 45 francs Pp 312 with 31 illustrations Paris Masson & Cie 1933

This is the sixth volume of a series, in the French language sponsored by the department of therapeutics of the Faculty of Medicine of Paris. It takes up, in practical detail, the various important remedies employed in diseases of the heart and of the blood. Like the other books of this series, it constitutes a valuable addition to the reference library of any practicing physician capable of reading French and is invaluable to the teacher of therapeutics as representing the French point of view and practice.

The Duties of Ohio Public Health Commissioners By W. W. Charters Director Bureau of Educational Research Ohio State University and Darwin A. Hindman Associate Professor of Physical Education Ohio State University Bureau of Educational Research Monographs Number 17 Ohio State University Studies Edited by Josephine H. MacLachlan Ph.D. Paper Price \$1 Pp 70 Columbus Ohio State University 1933

This is a statistical analysis of the activities of public health activities in Ohio based on the work of 56 out of a total of 180 commissioners. It led to the establishment of a course for public health officers with a curriculum of work now being done by the majority of health commissioners in Ohio. The activities are collected into headings such as laboratory and engineering activities, vital statistics, control of disease, administrative activities and educational functions.

Handbook of Tuberculosis Schemes for Great Britain and Ireland Seventh edition Paper Price 7/- Pp 162 London National Association for the Prevention of Tuberculosis 1933

This edition of the handbook is a valuable compilation for the use of British physicians. It sets forth in a complete and well organized manner the tuberculosis problem and the activities that are in movement against the disease. This information being given for shires and boroughs enables one to study the British situation in detail. Separate sections of the report deal with England, Wales, Scotland and Ireland. There is also a list of residential institutions which includes a description of the institution and information as to its capacity. The interest of this report to the American physician is largely in the information it gives about the treatment of tuberculosis through governmental agencies which seems to leave little or nothing for the private practitioner to do. For example, in the borough of Southport, having a civil population of 77,280, residential in character, with a total death rate of 1,496 per

hundred thousand and a tuberculosis death rate of 63 per hundred thousand, there is a tuberculosis dispensary open one day a week and a sanatorium available with thirty-six beds. There is no open-air school, however. There is a chief administrative officer and an assistant tuberculosis officer. In other boroughs of varying sizes, similar situations prevail. The book is obviously a reference volume for the British practitioner but it shows plainly what the effects on medical practice are of a socialized system of practice such as obtains in Great Britain.

Medicolegal

Evidence Scientific Tests, Lie Detector—The defendant was charged with bank robbery. In the course of his trial his counsel offered to prove, by a test on the defendant with an instrument known as a "lie detector" that when the robbery was committed the defendant was not in the city where it occurred and that he was not guilty. The offer described the "lie detector" and claimed that it had been found to give a continuous quantitative differential blood pressure and pulse curve, that one guilty of a crime becomes disturbed and has distinct emotional disturbances when questioned with reference to the details of a crime which he has committed, that such emotional disturbances are recorded on the "lie detector" above described, that this "lie detector" has been used in over 10,000 cases and that seventy-five per cent of those upon whom the lie detector has been used have confessed their guilt upon completion of a second test with the said lie detector. The trial court refused to admit the proffered evidence and the defendant was convicted. He then appealed to the Supreme Court of Wisconsin, alleging the exclusion of this evidence as error.

On the question raised by this assignment of error said the Supreme Court, there has been only one reported decision. In *Frye v. United States* 54 App. D. C. 46, 293 F. 1013, 34 A. L. R. 145, the defendant had submitted to a deception test, but the trial court refused to allow the scientist who made the test as an expert to testify as to the results. In that case the Court of Appeals of the District of Columbia said:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Some where in this twilight zone the evidential force of the principle must be recognized and while courts will go a long way in admitting expert testimony deduced from a well recognized scientific principle or discovery the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development and experiments thus far made.

The Supreme Court of Wisconsin was not satisfied that during the ten years that had elapsed since the above cited decision was rendered the lie detector had progressed from the experimental to the demonstrable stage. The court quoted Dean Wigmore's Principles of Judicial Proof (ed. 2) 1931:

Looking back at the range of possibilities for experimental psychometric methods of ascertaining concrete data for valuing testimonial evidence, it will be seen that thus far the only new psychometric method that has demonstrated any utility is the blood pressure method which detects lies. The record of psychometric achievement with testimony is still meager. The conditions required for truly scientific observation and experiment are seldom practicable. The testimonial mental processes are so complex and variable that millions of instances must be studied before safe generalizations can be made.

Dean Wigmore's statement said the court, seems to offer little comfort to one who contends that the lie detector is past the experimental stage. It may have some utility now and may ultimately be of great value in the administration of justice but a too hasty acceptance of it may bring complications and abuses that will overbalance whatever utility it may be assumed to have. The present necessity for elaborate exposition of its theory and demonstration of its practical working in order to convince the jury of its probative tendencies, together with the possibility of attacks on the soundness of its underlying theory and its practical usefulness may easily result in a trial of the lie detector rather than the issues in the cause. Moreover if

the defendant in a criminal case is to be permitted to have tests taken outside of court and then to produce expert testimony as to the results of the tests when these are favorable to him, without the necessity of taking the stand or submitting to tests by the prosecution, the way would seem to be open to abuses that would not promote the cause of justice. The Supreme Court of Wisconsin therefore concluded that the refusal of the trial court to admit the testimony was not error and affirmed the judgment of conviction—*State v. Bohner (Wis.)*, 216 N. W. 314.

Malpractice Criteria of Competence of Physicians in Rural and in Urban Communities—The defendant, an exodontist of Louisville, Ky., extracted one of the plaintiff's teeth. An infection set in and, attributing it to the neglect and unskillfulness of the defendant, the plaintiff sued. The lower court gave judgment for the defendant whereupon the plaintiff appealed to the Court of Appeals of Kentucky. It was contended that the trial court erred in instructing the jury that the term "ordinary care and skill" mean such care and skill as are generally employed by ordinarily careful and skillful exodontists in the community of Louisville, under like or similar circumstances. A similar instruction said the court, was condemned in *Burl v. Foster* 114 Ky. 20, 69 S. W. 1096, when the court said:

We think the sounder rule is not that the physician's skill and degree of attention should be measured by those of his community but by such as is exercised generally by physicians of ordinary care and skill in similar communities.

In reaching that conclusion in the *Burl* case, however, the court continued a premise was that the operation was performed by a local physician in a small village where there were insufficient comparative standards by which to measure the degree of skill. There is no disposition now to depart from that rule when the conditions or the locality are similar to those involved in that case. But the question here is whether the same rule should apply in a city of some 350,000 inhabitants, where there are many skillful practitioners of the profession. The court was unable to regard as error the instruction which required the defendant to exercise such care and skill as were generally employed by ordinarily careful and skillful practitioners of the same class in the community of Louisville.

The judgment of the trial court for the defendant was affirmed—*Lanner v. Sanders (Ky.)*, 56 S. W. 2d 718.

Evidence Mortality Tables Admissible, Disclosure of Employment of Witness by Defendant's Insurer Compellable—In an action for damages for personal injuries in which the evidence shows that the injuries to the plaintiff are permanent it is not error for the trial court to receive tables of life expectancy in evidence. If the defendant carries liability insurance and the physician called as an expert witness by him is employed by the defendant's insurance company, it is proper for the trial court to permit such facts to be elicited from the physician on cross examination, since this fact would tend to affect the weight of his testimony—*Lyons v. Joseph (Neb.)*, 246 N. W. 859.

Society Proceedings

COMING MEETINGS

- American Society of Tropical Medicine, Richmond, Va., Nov. 15/16, Dr. Henry E. Meleney, Vanderbilt University School of Medicine, Nashville, Tenn., Secretary.
- Association of American Medical Colleges, Minneapolis, Oct. 30/Nov. 1, Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago, Secretary.
- Central Society for Clinical Research, Chicago, Oct. 27, Dr. Lawrence D. Thompson, 903 University Club Building, St. Louis, Secretary.
- Medical and Surgical Association of the Southwest, El Paso, Texas, Dec. 7/9, Dr. W. Warner Watkins, Box 1587, Phoenix, Ariz., Secretary.
- Oregon State Medical Society, Portland, Oct. 26/28, Dr. Albert W. Holman, 364 Washington Street, Portland, Secretary.
- Southern Medical Association, Richmond, Va., November 14/17, Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.
- Southern Surgical Association, Hot Springs, Va., Dec. 12/14, Dr. Robert L. Payne, 142 York Street, Norfolk, Va., Secretary.
- Virginia Medical Society of Lynchburg, Oct. 24/26, Miss Agnes V. Edwards, 1200 East Clay Street, Richmond, Secretary.
- Western Surgical Association, Cincinnati, Dec. 8/9, Dr. Frank P. Teachener, 306 East 12th Street, Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

105 1250 (July 1) 1933

- Influence of Desiccated Thyroid Gland Thyroxine and Inorganic Iodine on Storage of Glycogen in Liver of Albino Rat Under Controlled Conditions H C Coggeshall and J A Greene Indianapolis—p 103
- Relationship of Adrenal and Thyroid Glands to Excised Muscle Metabolism J E Davis and A B Hastings Chicago—p 110
- Reflex Reversal and Interaction of Allied Vestibular Reflexes R Lorente de No St Louis—p 122
- Study of Blood Volume Regulation and Blood Composition in Experimental Hydræmia I Regulation of Blood Volume D B Calvin A H Smith and L B Mendell New Haven Conn and Columbia Mo—p 135
- Studies in Physiology of Vitamins VII Effect of Experimentally Induced Hyperthyroidism on Vitamin B Requirement of Pigeons G R Cowgill and M L Palmeri New Haven Conn—p 146
- Fundamental Chemical Changes in Contracting Mammalian Muscle. J Sacks and Wilma C Sacks Ann Arbor Mich—p 151
- Studies on Cerebral Cortex II Localized Representation of Hopping and Placing Reactions in the Rat C M Brooks Boston—p 162
- Effects of Theelin and Theelol in Latent Tetany F Mathieu and B O Barnes Chicago—p 172
- Diurnal Cycle in the Liver of the White Rat II Food a Factor in Its Determination G M Higgins J Berkson and Eunice Flock Rochester Minn—p 177
- Absorption of Glucose by Chronic Loops of Colon G E Burget P H Moore and R W Lloyd Portland Ore—p 187
- Preparation Identification and Assay of Prolactin A Hormone of the Anterior Pituitary O Riddle R W Bates and S W Dykshorn Cold Spring Harbor Long Island N Y—p 191
- *The Basal Level of the White Cell Count in Man Malvina Schweizer New York—p 217
- Mode of Action of Secretagogues (Liver Extract) in Promoting Gastric Secretion M S Kim and A C Ivy Chicago—p 220
- Effect of Amniotin on Basal Metabolism of Rats and Rabbits T C Sherwood M Savage and J F Hall Lexington Ky—p 241
- Carbohydrate Metabolism of Heart During Ventricular Fibrillation D R Hooker and N D Kehar Baltimore—p 246

"Basal Level" of White Cell Count—Schweizer made white cell counts on fifty subjects while at rest and during mild activity. She has not confirmed the existence of a 'basal level' as described by Garrey. Of the fifty subjects, twenty-six showed no significant difference in the two counts while ten showed an increase and fourteen a decrease in activity. The white cell counts taken on subjects before rising did not all fall into the range between 5,000 and 7,000 in fact counts as low as 4,700 and as high as 11,500 were found. Similarly, during activity the counts were found to range from 3,500 to 11,500.

Delaware State Medical Journal, Wilmington

7 129 150 (June) 1933

- Vaginal Hysterectomy W T Preston Wilmington—p 129
- A Few of the Less Common Complications in Surgery J C Pierson Wilmington—p 135
- Why Iodassium Iodide Should Not Be Used in Treatment of Tuberculosis C C Cooks Frankford—p 137

Potassium Iodide and Tuberculosis—Cook states that the tuberculous process in the lungs is the deposition of lime salts about the necrotic area. Tricalcium phosphate is the material that walls off and seals up the diseased area. When potassium iodide is administered it ionizes into positive potassium and negative iodine. Iodine is a powerful oxidizing agent and the water present which it ionizes into positive hydrogen and negative hydroxide ions is caused to liberate negative oxygen ions which acting on the insoluble tricalcium phosphate barrier cause it to break down into the soluble calcium hydrogen phosphate and the soluble calcium hydroxide thereby allowing the necrotic and caseous process to spread and increasing the chances of a break and of a consequent hemorrhage.

Journal of Bacteriology, Baltimore

25 545 654 (June) 1933

- Bacterial Variation (Abstracts of Certain Papers Presented Before Society of American Bacteriologists at Ann Arbor Dec 28 1932) Observations on Amorphous Phases of Bacteria Jean Broadhurst, New York—p 545
- Id II Some Pitfalls in Bacteriology M Frohisher, Jr Baltimore—p 565
- Id III Relation of Bacterial Variants of Kuhn to Chief Phases in Microbic Dissociation P Hadley Ann Arbor Mich—p 572
- Id IV Atypical Acid Fast Organisms II Some Observations on Filtration Experiments M Pinner, Tucson Ariz—p 576
- Id V Hypothetic View of Bacterial Variation G B Reed Kings-ton, Ont Canada—p 580
- Id VI Notes on Life Cycle Phenomena and Filtrability of Tubercle Bacillus H C Swancy Chicago—p 587
- Distinguishing Characteristics of Lactobacillus Acidophilus H R Curran L A Rogers and E O Whittier, Washington D C—p 595
- Studies of Bacterium Coli in Privately Owned Rural Water Supplies R L France Amherst Mass—p 623

Journal of Clinical Investigation, New York

12 505 612 (May) 1933

- *Further Studies on Agglutination Reaction in Chronic Arthritis Edith E Nicholls and W J Stansby New York—p 505
- Gastro Intestinal Studies II Pancreatic Enzymes in Pernicious Anemia O M Helmer, P J Fouts and L G Zerfas Indianapolis—p 519
- *Heat Cramps Clinical and Chemical Study J H Talbott, Boston and J Michelson Boulder City Nev—p 533
- Studies of Gastric Pepsin I Methods of Measurement and Factors Which Influence It A E Osterberg Frances R Vanzant and W C Alvarez Rochester Minn—p 551
- Id II Secretion of Pepsin in Cases of Duodenal Ulcer and Pseudo Ulcer Frances R Vanzant A E Osterberg W C Alvarez and A B Rivers Rochester Minn—p 557
- Studies of Urea Excretion VIII Effects on Urea Clearance of Changes in Protein and Salt Contents of the Diet C L Cope New York—p 567
- *Thermal Changes in Peripheral Vascular Disease During Sympathetic Ganglionectomy Under General Anesthesia W McK Craig B T Horton and C Sheard Rochester Minn—p 573
- Glycolysis in Blood of Patients with Pernicious Anemia S M Goldhamer Ann Arbor Mich—p 583
- Plasma Protein Changes and Suspension Stability of Blood in Lobar Pneumonia J K Moen and H A Reimann Minneapolis—p 589
- Blood in Cases of Unexplained Gastric Acidity W S Pollard San Francisco—p 599

Agglutination Reaction in Chronic Arthritis—Nicholls and Stansby observed that a high proportion of patients with rheumatoid arthritis give positive agglutination reactions to a specific type of hemolytic streptococcus. In patients with advanced joint involvement, higher average titers are obtained than in those with less involvement. The duration of the disease and the age of the patient play unimportant parts in the strength of the agglutination. Following the onset of the disease there is a gradual increase in the agglutination titer, which reaches its maximum in six months, on the average while following recovery of the patient the agglutinins tend to diminish and eventually to disappear. This reaction of serum in rheumatoid arthritis appears to be a true immunologic response. Other forms of arthritis do not give positive results in agglutination tests with typical strain streptococci.

Heat Cramps—Talbott and Michelson give a clinical description of five cases of heat cramps with a chemical study of the blood and urine. If the cause of heat cramps is essentially a loss of salt and water from the body tissues, treatment should provide for their restoration. The most rapid replacement of salt and water is by means of intravenous saline solution. The authors used only sodium chloride. In addition to the saline infusions, an exclusive milk diet was given during the first twenty-four hours. It is possible to prevent cramps by providing a daily supply of salt greater than that lost in the sweat. This amount may be determined by knowing the approximate amount of chloride excreted in a twenty-four hour specimen of urine. Less than 3 Gm of salt per day in the urine does not provide for a satisfactory margin of safety. Fresh cow's milk has an average salt concentration of about 0.3 per cent, and this provides fluid as well as salt. Salted drinking water (sodium chloride from 0.25 to 1 per cent) has been used successfully in the prevention of heat cramps among soldiers in the United States Army. Barley water and salted beer are used by certain local groups of colliers in England. It is possible that no salt need be taken between meals if the food is liberally salted at meal time. The necessary amount of salt to prevent

cramps is a function of the individual's susceptibility and of the amount lost in the sweat at a given temperature

Sympathetic Ganglionectomy—Craig and his associates made continuous observations of surface temperature, before and during sympathetic ganglionectomy, on all four extremities of four subjects with Raynaud's disease and thromboangitis obliterans. General anesthesia alone produced maximal vasodilation in Raynaud's disease and thromboangitis obliterans. Severance of the sympathetic nerves did not cause additional vasodilation. In Raynaud's disease a prompt and uniform vasodilating response was observed in the peripheral vessels of all four extremities, but in thromboangitis obliterans uniform response was absent because the occlusive process in the vessels of all four extremities is never the same in thromboangitis obliterans. The graphic records made with anesthesia at the time of operation serve as a check on preoperative studies carried out with other vasodilating agents. If satisfactory rises in the surface temperature of the involved extremities are not observed after induction of general anesthesia, it is evident that an additional rise will not develop after interruption of the sympathetic innervation. General anesthesia constitutes a satisfactory method for investigating thermal changes in cases of thromboangitis obliterans, Raynaud's disease, vasospastic scleroderma and arthritis, prior to and during sympathetic ganglionectomy. Valuable information may be obtained regarding the amount and extent of vasospasm in the vessels of the extremities particularly in the collateral circulation of subjects with thromboangitis obliterans, and the method gives accurate information regarding the degree of the occlusive process in this group of cases. Vessels of patients who are refractory to or react poorly to other vasodilating agents will usually undergo maximal vasodilation when general anesthesia is administered.

Journal of Immunology, Baltimore

24 433 558 (June) 1933

- Experimental Study of Antipoliomyelitic Serum from Monkeys Artificially Immunized with Organism Cultivated from Poliomyelitic Nervous Tissue. F. Elerson with technical assistance of W. G. Mossman. San Francisco—p. 433
- Usefulness of Blood Grouping in Medicolegal Cases Involving Blood Relationship. A. S. Wiener. Brooklyn—p. 443
- Comparative Phagocytic Activity of Macrophages and Polymorphonuclear Leukocytes. Essential Similarity of Trophic Action with Respect to Two Types of Phagocyte. B. Lucke, M. Strumia, S. Mudd, M. McCutcheon and Emily B. H. Mudd. Philadelphia—p. 455
- Effect of Flagellar and Somatic Sensitization of Typhoid Bacillus on Phagocytosis by Macrophages and Polymorphonuclear Leukocytes. Intracellular Digestion. S. Mudd, B. Lucke and M. Strumia. Philadelphia—p. 493
- Electric Charge of Antibodies. L. Olitzki. Jerusalem—p. 505
- Effect of Normal and Immune Staphylococcus Rabbit Serums on Action of Staphylococcus Bacteriophage. E. L. Burky. Baltimore—p. 513
- Individuality of the Red Blood Cells of Inbred Strains of Fowls. A. W. Kozelka. Chicago—p. 519
- Note on Fractionation of Antimengococcus Serum. P. P. Murdick and Sophia M. Cohen. Albany, N. Y.—p. 531
- Lipoidal Content of Antipneumococcal Horse Serum. L. D. Felton and Gladys Kauffmann. Boston—p. 543
- Proof of Presence of Agglutinin A in All Erythrocytes of Type AB. W. C. Boyd and M. A. Derow. Boston—p. 549

Journal of Pharmacology & Exper. Therap., Baltimore

48 127 266 (June) 1933

- Fate of Glyceryl Trinitrate in the Tolerant and Nontolerant Animal. L. A. Crandall, Jr. Chicago—p. 127
- *Recovery from Experimental Barbitol Poisoning Under Various Types of Fluid Administration. W. E. Gower. Chicago and J. Van de Erve. Charleston, S. C.—p. 141
- Chemotherapy of Quinoline Compounds. IV. Action of Certain Quinoline Compounds on Paramoecia. P. Brahmachari, R. Banerjee and U. Brahmachari. Calcutta, India—p. 149
- Comparative Potency of Some Digitalis Specialties According to Pigeon Method. A. J. Lehman and P. J. Hanzlik. San Francisco—p. 151
- Comparative Physiologic Actions of dl-β-Phenylisopropylamines. II. Bronchial Effect. G. A. Alles. Monterey Park, Calif. and M. Prinzmetal. St. Louis—p. 161
- Some New Alkalines in Tetrahydronaphthalene Series. G. G. Woods and N. B. Eddy. Ann Arbor, Mich.—p. 175
- Studies of Phenanthrene Derivatives. I. Comparison of Phenanthrene and Some 2, 3 and 9 Monosubstitution Products. N. B. Eddy. Ann Arbor, Mich.—p. 183
- Study of Cause of Death in Experimental Nicotine Poisoning in Dogs. F. E. Franke. St. Louis and J. E. Thomas. Philadelphia—p. 199
- Heat Regulation and Water Exchange. XIV. Liver Edema in Mechanism of Fever Produced by Beta-Tetrahydronaphthylamine and by Anaphylaxis. H. T. Marshall. Louisville, Ky. and H. G. Barbour. New Haven, Conn.—p. 209

- Id. XV. Water Content of Rat Liver in Shiga Vaccine Fever and Amidopyrine Antipyresis. M. K. Horwitz. H. Sherman and H. G. Barbour. New Haven, Conn.—p. 217
- Intracisternal Minimum Lethal Dose of Procaine Hydrochloride (Novocain) in Dogs. I. W. Co. Tui. New York—p. 223
- Effect of Different Narcotics and Narcotic Combinations on Minimum Lethal Dose of Procaine Hydrochloride Intracisternally. F. W. Co. Tui. New York—p. 229
- Observations on Influence of Certain Drugs on Edema of Paraphenylenediamine. M. B. Cohen, P. Wasserman and J. A. Rudolph. Cleveland—p. 235
- Influence of Oxygen Tension on Reversal of Proteolysis (Protein Synthesis) in Certain Malignant Tumors and Normal Tissues. C. Voegtlin, Mary E. Mayer and J. M. Johnson. Washington, D. C.—p. 241

Recovery from Barbitol Poisoning—According to the experiments of Gower and Van de Erve, diuresis hastens recovery from barbitol poisoning. Its importance in the therapy of poisoning by other members of the barbituric acid series is not established. For the optimal rate of recovery from barbitol poisoning the diuresis should be adequate in amount without overtaxing cardiac and renal function and should be maintained hour by hour through the recovery period. The authors discuss several types of diuresis. The use of picROTOXIN as an antidote for the acute depression of barbitol does not preclude the importance or value of diuresis.

Kansas Medical Society Journal, Topeka

31 203 246 (June) 1933

- President's Message. Financial Angle of the Medical Profession. J. D. Colt. Sr. Manhattan—p. 203
- Sterility in the Female. J. D. Clark. Wichita—p. 207
- Infectious Mononucleosis (Glandular Fever). Report of Cases. R. I. Canuteson. Lawrence—p. 212
- *Flavobacterium Orchitis. N. P. Sherwood. Lawrence—p. 220
- Huntington's Chorea. Florence P. Chapman. Topeka—p. 220

Flavobacterium Orchitis—Sherwood isolated a new organism from the spinal fluid in a treated case of meningitis. It was apparently in pure culture and extensively phagocytized. Bergy has suggested that it be called *Flavobacterium orchitis*. Its relationship to *Flavobacterium whitmorei* is being investigated. The organism presented short rods with rounded ends showing bipolar staining, occurring singly and in short chains. They were motile, gram negative and capsulated and did not produce spores. A gelatin stab formed rapid crateriform liquefaction. The agar colonies were circular, slightly raised, thick and opaque, were slightly brown in seventy-two hours, and showed a somewhat irregular margin. The glycerol agar slant was thick, mucoid and cream colored. The broth was turbid with a pellicle. There was coagulation with acid production and peptonization in the litmus milk culture. Growth was vigorous on potato medium, which was slightly brown in seventy-two hours. Indole was not formed, nitrates were reduced, blood serum was liquefied, and hydrogen sulphide was not produced. Growth on blood agar plates showed hemolysis and methemoglobin. Acid was produced in dextrose, lactose, maltose, sucrose and mannitol. The organism is quite virulent for guinea pigs and rabbits. Males develop acute orchitis following intravenous inoculation. There is considerable evidence suggesting that a soluble toxin is produced. Focal lesions in the liver, spleen and lungs are also produced.

Laryngoscope, St. Louis

43 435 518 (June) 1933

- Remarks on Vestibular Tests. Record of Vestibular Findings in a Group of Mixed Neurologic Cases. B. H. Shuster. Philadelphia—p. 435
- *Palm and Fork Test in Differential Diagnosis Between Conductive and Perceptive Deafness. A Reversal of Bing's Finger and Fork Test. B. M. Becker. Brooklyn—p. 456
- External Otitis with False Membranes Apparently of Diphtherial Origin. Case. P. Panneton. Montreal, Canada—p. 463
- Intracranial Complications of Otitic Origin in Sclerotic Mastoid Without Middle Ear Suppuration. Case Report. L. Usen. Brooklyn—p. 467
- Practical Points in Otology of Special Interest to Pediatricians and General Internists. W. Hewson. Philadelphia—p. 473
- Atresia of Choanae. Its Incidence and Cause. J. P. Schaeffer. Philadelphia—p. 480
- Nasal Sinuses. Practical Considerations of General Interest. H. M. Goodyear. Cincinnati—p. 482
- Adenoma of Pituitary Producing Headache of a Type Caused by Sinus Disease. Report of Case. H. B. Cohen. Philadelphia—p. 496
- Postoperative Pulmonary Complications. Are They Preventable? C. Jackson. Philadelphia—p. 499
- Carcinoma in Lung Abscess Cavity. J. D. Kernan and A. J. Craco. New York—p. 501
- New Headlight. D. R. Gaskin. Phoenix, Ariz.—p. 504

Palm and Fork Test—Becker describes the palm test for deafness, which consists in pressing the palm of the hand over the ear to be tested while a vibrating tuning fork is applied to the opposite mastoid. On comparing the prolonged bone conduction produced by tympanic disease, finger and palm obturations, it will be observed that the palm obturation almost invariably exceeds that of the others, both in the duration and the intensity. In bilateral normal hearing, when a vibrating tuning fork is put on the vertex and one ear is occluded with a finger, the sound will become localized in the obstructed ear. In a case of unilateral conductive deafness, when the handle of a vibrating fork is set on the vertex the sound will lateralize faintly or strongly, depending on the degree of the involvement of the tympanic structures in the deafened ear.

Military Surgeon, Washington, D C

72 421 476 (June) 1933

Typhus and Rocky Mountain Spotted Fever in the United States R E Dyer—p 421
The Kahn Test in the United States Army S C Schwartz—p 440
Puncture of Cisterna Magna R E Elvins—p 452

Missouri State Medical Assn Journal, St Louis

30 229 262 (June) 1933

Cardiac Care Other Than Rest and Digitalis G Asher Kansas City—p 229
Transurethral Prostatic Resection in Retrospect C K Smith Kansas City—p 234
Leukopenia A H Wells Kansas City—p 237
Ocular Crisis Report of Two Cases C T Eber St Louis—p 241
Torsion of Spermatic Cord H B Goodrich Hannibal—p 242
New Elastic Breast Binder for Support or Compression O S Krebs S D Soule and Hilda C Crosby St Louis—p 245
New Electrical Bassinet Warmer P S Astrowe Kansas City—p 247
Unusually Large Strangulated Abdominal Hernia Operation Under Unfavorable Conditions Complete Recovery F J Smith St Louis—p 248
Myxedema with Hypertension Improved with Thyroid Medication L G Livingston Cordell Okla—p 249

New England Journal of Medicine, Boston

208 1285 1336 (June 22) 1933

General Aspects of Treatment of Chronic Arthritis G R Minot Boston—p 1285
Intrahepatic Cholelithiasis M F Fallon Worcester Mass—p 1291
Recurrent or Intermittent Jaundice in Youth W E Hartsborn New Haven Conn—p 1294
Massachusetts Medical Society The President's Address H G Stetson Greenfield Mass—p 1300
*Arteriosclerosis and Diabetes Mellitus E R Lehnher Boston—p 1307
What Are Death Rates in Massachusetts Doing? G H Bigelow and Angeline D Hamblen Boston—p 1313

208 1337 1388 (June 29) 1933

The Trend of Medicine in the Twentieth Century C Frothingham Jamaica Plain Mass—p 1337
Role of Allergy in Arthritis F M Rackemann Boston—p 1347
Our Later Heritage H Q Gallupe Waltham Mass—p 1352
Clinical Study of Aerophagia J Friedenwald and S Morrison Baltimore—p 1360
Chaucer and Matters Medical N W Bolduan New York—p 1365
Progress in Anesthesia in 1932 R F Sheldon Boston—p 1369

Arteriosclerosis and Diabetes Mellitus—Lehnher reports the chemical analyses for the lipids calcium and phosphorus content of twenty-five nondiabetic adult aortas, twenty-five diabetic adult aortas and six nondiabetic children's aortas. The process of atheromatosis is accompanied by definite changes in the lipid deposit lipid allocation and calcium and phosphorus deposition which are similar in the diabetic and the nondiabetic aortas. The diabetic aortas differ from the nondiabetic aortas in having exaggerated lipid changes and more calcification. The aortas from the diabetic patients of middle and later life show lipid changes and increased calcium and phosphorus deposition comparable with nondiabetic aortas of an older age. The diabetic aortas show more marked calcium and phosphorus deposition than nondiabetic aortas with similar cholesterol deposits. The duration of the diabetes in the adult patients had no definite relationship with the chemical observations in the aortas. Severe diabetes of two years duration in a child was associated with greater lipid but less calcium and phosphorus deposition in the aorta than was found in an aorta from a diabetic child having had uncontrolled diabetes of eight years' duration.

New Jersey Medical Society Journal, Orange

30 371 418 (May) 1933

The General Practitioner, His Responsibilities and Problems J C McCoy Paterson—p 371
Ten Years with the Maternal Welfare Commission of Essex County W B Mount Montclair—p 377

30 419-470 (June) 1933

Some Surgical Considerations in Repair of Obstetric Trauma J R O Sullivan Jersey City and B A O'Connor Kearny—p 419
Electrocardiograms of Mental Patients II Further Report on Total of Patients L Levin Trenton—p 424
Some Trends in Modern Medicine J Schapiro New York—p 427
Toxic Hepatitis (Acute Yellow Atrophy) Due to Cinchophen (Atophan) L L Perkel Jersey City—p 429
Peptic Ulcer F Pearlstein West New York—p 433
Effects of Tobacco on Adolescents W B Stewart Atlantic City—p 436
Problems Confronting Plastic Surgery J W Malinik Newark—p 439
Retroperitoneal or Postperitoneal Dermoid Cyst J C Spallone Newark—p 442
Application of Boltz Test to Urine R A Kilduffe Fdna D Wilson and Hilda Bernstein Atlantic City—p 443
Treatment of Repeated Stillbirths and Miscarriages A W Bingham East Orange—p 444

New Orleans Medical and Surgical Journal

85 879 958 (June) 1933

Memorial Oration Louisiana State Medical Society J Q Graves Monroe La—p 879
Little Things in Which Cancer May Develop and Importance of Discovering Them Early So That Cancer May Be Prevented or Easily Cured J C Bloodgood Baltimore—p 884
Some Interesting Observations on Gonorrhea A Eustis New Orleans—p 892
Resection of Cervical Portion of Esophagus and Larynx for Carcinoma Report of Case H R Mahorner New Orleans—p 898
Fractures of Mandible and Their Treatment J P Wahl New Orleans—p 900
Modern Treatment of Asthma B G Efron New Orleans—p 906
Leukocyte Count in Rabbits After Injection of an Organism Isolated from a Case of Granulocytopenia W A Sodeman New Orleans—p 909

86 176 (July) 1933

The Community Hospital J M Acker Jr Aberdeen Miss—p 1
A Louisiana Decree of 1770 Relative to the Practice of Medicine and Surgery D C McMurtrie Chicago—p 7
Diagnostic Difficulties of Digestive Disturbances J E Knighton Shreveport—p 11
*Peptic Ulcer Pitkin Treatment R M Stephenson Lexington Miss—p 14
Just an Appendix I Cohn New Orleans—p 16
Treatment of Amebic Abscess of Liver by Aspiration M D Hargrove Shreveport—p 21
Mumps Encephalitis Report of Case with Bilateral Optic Neuritis Rapid and Complete Blindness and Complete Recovery R C Young Shreveport—p 25
Anhydremia Its Mechanism and Treatment R Kapsinow Lafayette—p 33

Peptic Ulcer—Stephenson treated thirty-six cases of peptic ulcer by the intravenous synergistic method of Pitkin, that is, with a preparation composed of lipins, lipoids emetine and a protein. The author believes that the intravenous administration of 6 cc of the preparation, every third day for three doses, will render every patient with peptic ulcer symptom free provided the diet is confined to fresh or malted milk, cream, butter-milk, soft-boiled or raw eggs, broths and soups, cereals, starch rice and bread puddings baked or mashed potatoes, plain ice cream ices and sponge cake. Coffee, tea and alcoholic beverages are prohibited. After the sixth dose baked, broiled or boiled fresh fish and chicken (white meat), peas, squash spinach, mashed carrots asparagus, fruit juices and stewed fruits (except berries) may be added. After the fifth week all dietary restrictions are dismissed with the exception of alcoholic beverages and preserved meats or fish. It is preferable to give the injection when the stomach is empty as the reaction is almost immediate and if it is given after meals vomiting may occur. In the milder cases there is freedom from pain after the first injection. Six injections at intervals of three to four days usually suffice in the milder cases. Patients who have suffered for a long time with marked gastric or duodenal lesions may require eight doses the subsequent doses being given a week apart. The maximal number of injections for one course is ten. If a second course of treatment is required from six to eight weeks should intervene. The solution may be injected into the muscles.

of the arms or the buttocks, if intravenous injection is contra-indicated. In hemorrhagic cases the injection is repeated every second day.

New York State Journal of Medicine, New York

33 673 722 (June 1) 1933

- Appendicitis. General Survey and Statistics. T. Wright. Buffalo—p. 673.
Diagnosis of Appendicitis. E. P. Iothrop. Buffalo—p. 675.
Chronic Appendicitis? G. R. Critchlow. Buffalo—p. 677.
Complications of Appendicitis. Immediate and Remote. M. A. Sullivan. Lackawanna—p. 679.
Scarlet Fever Control. F. W. Laidlaw. Middletown—p. 684.
Lichenoid Sarcoid (Boeck). Report of Case with Review of Literature. J. L. Morse. New York—p. 686.
Summary of Physiology of Female Reproductive System. Some Clinical Observations. N. P. Sears. Syracuse—p. 690.
Structural Changes of Aorta Due to Arteriosclerosis as Observed Roentgenologically. W. W. Fray and J. H. Green. Rochester—p. 694.
Two Series of Cases of Food Poisoning. L. H. Cotter. New York—p. 698.
Arrested Shoulders in Vertex Presentation. M. Hornstein. New York—p. 700.

33 723 790 (June 15) 1933

- Academic and Industrial Research in the Field of Therapeutics. H. H. Dale. London. England—p. 723.
Significance and Detection of Tuberculosis in School Children. W. J. Ryan. Pomona—p. 729.
Tuberculin Tests in Children. Comparative Studies with Different Makes of Tuberculin. H. A. Reisman. Jamaica—p. 734.
Unresolved Pneumonia. H. J. Harris. Westport—p. 738.
*Simple Procedure for Cure of Rhinophyma. J. J. Eller. New York—p. 741.
Group Study in Hay Fever. H. S. Berkoff. New York—p. 743.
Acne Vulgaris. Review of Two Hundred Cases with Reference to Classification and Treatment. A. R. McFarland. Rochester—p. 747.
Tularemia in Which No Local Lesion Developed at Site of Injury. Case. E. R. Maillard. Albany—p. 751.
Trichiniasis, with Recovery. M. D. Kenler and J. J. Silverman. Tompkinsville. Staten Island—p. 752.
Evaluation of Arsphenamines for General Use with Especial Reference to Sulpharsphenamine. E. D. Osborne, R. J. Rickloff and M. G. Butler. Buffalo—p. 753.
Avian Tuberculosis of Skin. Notes. R. H. Rulison. New York—p. 757.

Operation for Rhinophyma—Eller reports four cases of rhinophyma in which he obtained good cosmetic results by a relatively simple procedure. The superfluous tissue was pared off under local anesthesia until the nose was shapely. Later, when the skin had grown over the denuded areas it was treated by applications of x-rays, trichloroacetic acid or phenol. Each patient regained a shapely nose without conspicuous scars.

Northwest Medicine, Seattle

32 217 264 (June) 1933

- Present Status of Food Allergy. A. H. Rowe. San Francisco—p. 217.
Value of Skin Testing as Aid in Diagnosis of Allergic Diseases. M. W. Moore. Portland. Ore.—p. 224.
Transurethral Treatment of Prostatic Hypertrophy. H. C. Bumpus Jr. Rochester. Minn.—p. 227.
Transurethral Prostatic Resection. C. T. Engels. Tacoma. Wash.—p. 232.
Observations on Sinus Surgery with Especial Reference to External Ethmoidectomy. G. E. Griffith and E. D. Warren. Tacoma. Wash.—p. 236.
Lipiodol in Diagnosis of Maxillary Sinus Conditions. I. A. Druess. Tacoma. Wash.—p. 242.
Nasal and Accessory Sinus Disease as a Manifestation of Systemic Disorders. W. W. Baum. Salem. Ore.—p. 245.
Idiopathic Epilepsy. Some Etiologic Factors. L. D. Inskeep. Medford. Ore.—p. 248.

Ohio State Medical Journal, Columbus

29 337 400 (June 1) 1933

- Transurethral Resection of Prostate. Conservative Procedure. W. E. Lower and W. J. Engel. Cleveland—p. 357.
*Hay Fever Treatment. Continuous Method. K. D. Figley. Toledo—p. 360.
Cervical Lymphadenopathy. B. K. Wiseman. Columbus—p. 364.
Determination of Visual Acuity. P. G. Moore. Cleveland—p. 367.

Hay Fever Treatment—Figley believes that the advantages of the continuous method of treatment in hay fever are that 1. After the protective dose is once reached the number of office visits required is lessened appreciably. 2. Treatment is less likely to be interrupted by illness or vacations. 3. Treatment may be started any time. 4. After monthly treatments have been sufficiently established results are invariably better than by the interrupted method. 5. There is good reason to

believe that a clinical cure can be accomplished in much shorter time than by the interrupted or seasonal method. One other beneficial feature of this method is that patients are kept under observation frequently enough and long enough for other manifestations of allergy to be recognized and corrected. Many hay fever patients have other allergic manifestations, particularly food sensitizations, such as eczema, migraine or colitis. In the author's series of 125 cases treated continuously for two years or more twelve (10 per cent) have attained a clinical cure. Not one of them has had any symptoms for the past two years and in all the skin tests to their specific causative pollens are negative. Most of these were cases of average sensitivity in which considerable immunity had been acquired before treatment was begun.

29 401-444 (July 1) 1933

- Therapeutic Values of Scarlet Fever Antitoxin. F. E. Stevenson. M. A. Veldee and A. G. Mitchell. Cincinnati—p. 421.
Radiologic Study of Abdominal Tumors and Their Differentiation. S. Brown. Cincinnati—p. 424.
Familial Hemolytic Jaundice. Clinical Study of Case Before and After Splenectomy. D. M. Glover and W. C. Fargo. Cleveland—p. 428.
Practical Consideration of Sphenoidal Sinus Infection. H. H. Val. Cincinnati—p. 432.
Adult Health Education. R. Lockhart. Cleveland—p. 436.
*Treatment of Undulant Fever in Man with Detoxified Vaccine and Antiserum. Preliminary Note. A. E. O'Neil. Cincinnati—p. 438.

Scarlet Fever Antitoxin—Stevenson and his associates observed the therapeutic effects of scarlet fever antitoxin in eighty-four controls, seventy-four patients treated with antitoxin A and thirty-eight treated with antitoxin B. The duration of the period of eruption in the combined groups treated with antitoxin was 4.4 days as against 6.8 days in the control group. The antitoxin had no apparent influence on the duration of the interval before desquamation began nor did it have a pronounced influence on the desquamation period. There was a definite tendency for the desquamation to be localized and mild in character in the serum treated patients but to be generalized and marked in the controls. An analysis of the temperature records failed to reveal any definite febrile reduction following an administration of antitoxin. Excluding serum sickness, there were 75 per cent fewer major complications (cervical adenitis, otitis media, mastoiditis, nephritis and toxic arthritis) in the serum treated than in the control group. Of the serum treated patients, 66.3 per cent developed serum sickness of varying degrees of severity. A previous injection of serum seemed to be the most important predisposing cause of serum sickness. Of the patients who had received a previous injection of horse serum in any form, 87.2 per cent developed serum sickness and of those who had previously received serum only in the form of diphtheria toxin-antitoxin, 85.3 per cent developed serum sickness. In the group of patients who had received no previous injection of serum, 40.8 per cent developed serum sickness. In this group the incidence of serum sickness seemed to be directly influenced by the volume of serum injected, since 66.7 per cent of the patients receiving 20 cc of serum (antitoxin A) and 16 per cent of those receiving 8 cc of serum (antitoxin B) developed serum complications.

Undulant Fever Treated with Detoxified Vaccine—O'Neil treated five cases of undulant fever with detoxified *Alcaligenes abortus* vaccine. In every instance clinical improvement exactly paralleled desensitization to the bacterial protein. None of the patients have had remissions within a maximum period of two years after infection. Goats immunized with nitrous acid treated vaccine yielded a serum which was used to treat three patients. One patient was treated with human hyperimmune serum. In all instances the serum treatment brought about a drop in temperature to normal, and a considerable reduction in hypersensitivity was shown by the skin test. The author believes that this report is justified in view of the fundamental immunologic responses seen in the management of these cases.

Philippine Islands Medical Association Journal, Manila

13 277 326 (June) 1933

- Malaria Prophylaxis and Mosquito Control. P. F. Russell. Manila—p. 277.
Medical Service in Industry. P. I. de Jesus. Manila—p. 289.

Public Health Reports, Washington, D C

48 677 702 (June 16) 1933

Nonmannitol Fermenting Type of Streptococcus Enteritidis Producing Clinical Reactions Similar to Those of Rocky Mountain Spotted Fever Virus L F Bridger—p 677
Experimental Studies of Natural Purification in Polluted Waters VII Selection of Dilution Water for Bacteriologic Examinations C T Butterfield—p 681

48 703 752 (June 23) 1933

Distribution of Mottled Enamel in the United States H T Dein—p 703
Hydrolysis of Phenyl and Cresyl Phosphoric and Phosphorous Acid Esters in Alcoholic and Aqueous Systems M I Smith and E F Stohlman—p 734

48 753 786 (June 30) 1933

*Pellagra Preventive Value of Green Cabbage Collards Mustard Greens and Kale G A Wheeler and D J Hunt—p 754
Relation Between Trypanocidal and Spirocheteicidal Activities of Neosarsphenamine IV Spirocheteicidal Activity as Measured by Sterilizing Efficiency of Neosarsphenamine T F Probe—p 758

Prevention of Pellagra—Wheeler and Hunt have found that canned green cabbage and canned mustard greens contain the pellagra-preventive factor and that, though not fully adequate in themselves, they may be regarded as quite practicable contributory sources for supplementing otherwise pellagra-producing diets Canned collards and canned kale are satisfactory pellagra-preventive supplements, at least when used in relatively large proportion

Radiology, St Paul

20 417 504 (June) 1933

Scope of Activity of Roentgenologic Physician L G Cole New York—p 417
Experience in Irradiating all Types of Bone Tumors M Kahn Baltimore—p 428
Report of Over a Thousand Unselected Cancer Cases Treated in 1931 1932 at New York City Cancer Institute Welfare Island I I Kaplan New York—p 433
Therapeutic Fever Produced by Diathermy Its Present Developments and Future Possibilities J C King Memphis Tenn—p 449
Study of Changes in Definition Occurring with Bucky Diaphragm of Mobile Type New Device for Correcting Chief Defect Resulting from Its Mobile Character W W Fray and W T Hill Rochester N Y—p 456
Roentgenologic Differentiation of Lesions of Right and Left Heart L C Rigler Minneapolis—p 463
Iodized Rapeseed Oil (Camptodol) an Improved Roentgenographic Opaque Oil M A Glaser Los Angeles and G W Ratziss Philadelphia—p 471

Southwestern Medicine, Phoenix, Ariz

17 179 214 (June) 1933

The Doctor and the Public H A Ingalls Roswell N M—p 179
Genital Hypoplasia in Women Clara S Webster Tucson Ariz—p 180
Gonorrhea and Its Complications in the Male J W Pennington Phoenix Ariz—p 187
Considerations in Treatment of Periarthritis of the Shoulder J A Dickson Cleveland—p 192
New Experiment A Point of View of the Report of the Committee on the Costs of Medical Care R J Stroud Tempe Ariz—p 196
Oral Administration of Pollen Extracts Hay Fever and Asthma Therapy E A Catterdam Jr Phoenix Ariz—p 199
Public Health Notes J R Earp Santa Fe N M—p 202

Oral Administration of Pollen Extracts—Gatterdam placed thirteen patients sensitive to the pollen of Bermuda grass on a 3 per cent Bermuda extract made in a phosphate glycerin solution The dosage was from 15 to 30 drops orally Nine patients were treated with ash extract Only one of these took the treatment pre-seasonally This patient experienced most gratifying results and did not require any other form of treatment for the relief of asthma Of the other eight only one did not receive any relief and one experienced only about 60 per cent relief The other six obtained from 90 to 95 per cent relief Thirteen patients suffering from the Franserias (rabbit bush and desert ragweed) took an extract made from these They all reported from 90 to 100 per cent relief Of the six who took it seasonally relief was obtained in all but one The author concludes that oral administration of pollen extracts has a definite place in hay fever therapy Pre-seasonal treatment gives the better results however relief may be obtained with seasonal treatment It is possible to produce a mild gastric or intestinal mucosal reaction which accounts for the rapid action similar to that seen with skin testing reactions It hardly seems possible that digestion and absorption would be rapid enough Apparently the gastric juice does not have any detrimental effect on the value of the oral solution

Texas State Journal of Medicine, Fort Worth

29 63 172 (June) 1933

Memorial Address C M Grigsby Dallas—p 70
Blind Men and the Elephant J H Foster Houston—p 72
Treatment of Congestive Heart Failure and Its Underlying Principles F A Wilhus Rochester Minn—p 76
Some Practical Observations and Deductions on Pathology of the Living Reiteration and Elaboration A C Broders Rochester Minn—p 79

United States Naval Med Bulletin, Washington, D C

31 241 346 (July) 1933

Severe Head Injuries L W Johnson and T G Hays—p 241
*Carboxide Gas New Insecticidal Fumigant for Bedbugs and Cockroaches E W Brown—p 253
*Acute Pancreatic Necrosis Occurring During General Anesthesia Report of Three Cases D J Cracovaner—p 268
Selection of Reliable Safe Mydriatic for Fundus Examination W D Horner—p 276
Joint Training of Army and Navy Medical Reserve J R Hall and R H Hunt—p 281
Treatment of Supracondylar Fractures of Humerus D S O'Connor—p 285
Roentgenography of the Nasal Accessory Sinuses Simple Device Producing Accurate Exposures with Standard Equipment W A Fort—p 289

Carboxide for Fumigation—Brown conducted tests in a relatively air-tight chamber of approximately 2,000 cubic feet capacity, with the object of determining the minimal lethal dosage of carboxide gas (ethylene oxide) for fumigation He recommends the following minimum lethal concentrations per thousand cubic feet in a relatively air-tight space 5 pounds for three hours, 3 pounds for six hours, 3 pounds for twelve hours, 2 pounds for eighteen hours and 2 pounds for twenty-four hours Carboxide gas is nonflammable and nonexplosive, is noninjurious to fabrics, furniture or food products, is of about one thirty-seventh to one sixtieth of the toxicity of hydrocyanic acid gas for man, and is not prohibitive from the standpoint of cost

Pancreatic Necrosis—Cracovaner presents three cases of acute pancreatic necrosis occurring during the administration of a general anesthetic Only by a careful study of specimens is it possible to determine the anatomic peculiarities that have a physiologic significance and constitute an important factor in the production of this condition He recommends that particular attention be paid to the comparative size of the pancreatic ducts of Wirsung and Santorini and to the relation of the septum separating the common bile duct and the duct of Wirsung in the ampulla of Vater to the sphincter of Oddi also that a culture for organisms be made of the bile in the gallbladder The author suggests the following alternative in those cases in which facilities are not available for a complete anatomic study of these structures, both gross and microscopic 1 The gallbladder, common and cystic bile ducts, duodenum and pancreas intact should be removed 2 The pancreas should be cross-sectioned midway between its middle and its tail end The common pancreatic duct should be injected with methylthionine, chloride U S P (methylene blue) by means of a needle and syringe The injection should be made with the duct of Wirsung occluded and then with the duct of Santorini occluded The common bile duct should be injected near its origin 3 The intact organs should be placed in a 10 per cent solution of formaldehyde and submitted to the Naval Medical School The author believes that the most dangerous stage of anesthesia for the production of acute pancreatic necrosis is during the second stage of induction and when the patient is regaining consciousness It is then when reverse peristalsis, retching, vomiting, struggling, and so on are most prevalent

West Virginia Medical Journal, Charleston

20 241 292 (June) 1933

President's Annual Address D A MacGregor Wheeling—p 241
Gastric Syphilis Prevalence Status of Our Knowledge Based on Survey of Recent Literature W E Vetter Huntington—p 249
Bilateral Double Kidney with Duplication of Ureters T J McBeck Morgantown—p 257
Chronic Vesiculovaginitis T G Reed Charleston—p 263
Use of Spinal Anesthesia in Patients Suffering with Traumatic Conditions of Pelvis or Lower Extremities O H Fulcher Welch—p 267
Acute Appendicitis R Lublin Harford Conn—p 269
Typhoid Fever in West Virginia W A Wilkerson Montgomery—p 270

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45 281-332 (July) 1933

- *Primary Leukosarcoma of the Skin W N Goldsmith—p 281
 *Celery Itch Dermatitis Due to Celery in Vegetable Canning S A Henry—p 301
 *Peculiar Form of Purpura Clinical Note A Piney—p 309
 Granulomatous Ulceration Healed by Antimony Case J F Smith—p 311

Primary Leukosarcoma of the Skin—Goldsmith describes a case with the general characteristics of Sternberg's leukosarcoma. It differs from classic leukosarcoma in that (1) though the tissue tumors were composed mainly of the usual monocytes, the blood leukocytosis was composed predominantly of small lymphocytes, (2) there were no hemorrhages, and (3) the primary tumor originated in the skin and was unusually malignant. The author states that a review of recent work points to the probability that at least the three conditions known as lymphatic leukosis, leukosarcoma and lymphosarcoma are manifestations of the same disease, and that the variations depend on differences in the individual attacked. He believes that his case with its combination of small lymphocytes and monocytes supports this view. He discusses the nature and origin of the monocytes and puts forward a hypothesis as to the pathologic sequence of events.

Celery Itch—Henry observed a form of dermatitis confined to the upper limbs and associated with itching in twenty-two workers preparing celery for canning. The dermatitis commenced as an erythematous, vesicular or papular rash. In the majority of cases the attack was not severe and it was possible for the patient to be transferred to other work while receiving treatment. Nine were cured in one week, six in two weeks, two in three weeks, two in four weeks, and three were not cured until the fifty-third, sixtieth and seventy-eighth day, respectively. The author suggests that the main causative factor is limonene, a hydrocarbon of the terpene series and a constituent of celery oil, water, friction and individual susceptibility playing their respective parts as preparatory causes. The preventive measures adopted consisted of transferring the patient to other work, and the application to the skin of those not affected, of a suitable oil (pure petrolatum) before commencing work.

Purpura—Piney encountered an apparently unknown malady in a boy, aged 17, who had been perfectly well until six days before he saw him, when he vomited. Since then he had felt ill and had vomited after any sort of food. His feces were stated to contain blood on the third day of the illness. The day before he was admitted to the hospital a purpuric rash appeared on his hands and feet. On examination, the rash was seen to be dark reddish purple, some vesicles were the size of a pinhead, whereas others were as big as a shilling. Each spot was slightly raised above the surface and was surrounded by a narrow red areola. The temperature was 96 F and the pulse 120. During the time that the rash was emerging (three weeks), there was a peculiar fecal odor around the patient. The individual spots went through a series of changes, which culminated in the formation of dark purple blebs containing blood-stained fluid. Some of these blebs burst, whereas others disappeared. The fluid obtained by puncturing a bleb was sterile. Two days after admission, the temperature rose to 99.8 F and during the next three weeks it continued to rise in the evening, although it was almost normal in the morning. The blood showed 6,272,000 red corpuscles per cubic millimeter, hemoglobin, 102 per cent, color index 0.8, leukocytes 14,000 per cubic millimeter, neutrophils band forms 12.3 per cent, polymorphonuclears 49.4 per cent, monocytes 21 per cent, and lymphocytes 17.3 per cent. Class I of the Arneith-Cooke count was 47 per cent, class II 49 per cent and class III, 4 per cent. The weighted mean was 1.57. The cytoplasm of all the neutrophilic leukocytes showed toxic changes. The temperature began to settle sixteen days after admission to the hospital, but occasional evening rises occurred for the next two weeks. The patient's general condition improved, but albuminuria was noted. No casts or red cells were found in the urine, and the

patient felt well. The patient was discharged from the hospital eleven weeks after admission, feeling well but still with a trace of albumin in the urine. No abnormalities were present in the blood at the time of discharge. He was alive and well, with only slight albuminuria, ten months later.

British Journal of Ophthalmology, London

17 385-448 (July) 1933

- Derangement of Corneal Nerves J H Doggart—p 385
 Retina in Hemochromatosis K Maddox—p 393
 Primary Position of Eyes N A Stutterheim—p 394
 Automatic Regulation of Heating in Electrical Hot Air Sterilization of Surgical Eye Instruments and Sutures for Suture S Holth—p 402
 Identity of Cataract Formations J Foster—p 408
 Paralytic Alternating Strabismus of ? Congenital Origin E A Seale—p 415
 Conjunctival Band Simulating a Persistent Nictitating Membrane C V Krishnaswami—p 417
 New Anterior Synechia Knife C V Krishnaswami—p 419

British Journal of Radiology, London

6 385-448 (July) 1933

- Biologic Response to Gamma Rays of Radium as Function of Intensity of Radiation F G Spear and I G Grimmett—p 387
 New Fluorescent Screen for Visual Examinations J Levy and D W West—p 404
 Radiography of Urinary Tract E J H Roth—p 411
 Electron Waves F T Jones—p 427

Edinburgh Medical Journal

40 293-320 (June) 1933

- Symptomatology of Diabetes Mellitus Analysis of One Thousand Seven Hundred Cases R M Murray Lyon—p 293
 Comparison of Wassermann, Kline and Meinicke Tests for Serum J D A Gray—p 305

International Journal of Psycho-Analysis, London

14 297-462 (July) 1933

- Problem of Duplicated Expression of Psychic Themes L Jekels—p 300
 Play, Reality and Aggression M N Searl—p 310
 New Ways in Psychoanalytic Technique T Reik—p 321
 Superego in Our Judgments of Sex F Wittels—p 335
 Jewish Phylacteries and Other Jewish Ritual Observances M D Eder—p 341
 Psychoanalytic Aspects of Suicide K A Menninger—p 376

Journal of Laryngology and Otology, Edinburgh

48 457-524 (July) 1933

- Intrathoracic New Growths and Value of Bronchoscopy in Diagnosis and Treatment V E Negus—p 457
 Malignant Disease of Oropharynx Including the Fauces G Gordon Taylor—p 463
 Id N Patterson—p 473
 *Radiologic Treatment of Some Cancers of Oropharynx J Maisin L Van Den Wildenberg and H C Vassiliadis—p 479

Radiologic Treatment of Cancers—Maisin and his associates point out that it is possible to cure sarcomas of the tonsils and local epithelial cancers of the oropharynx with external irradiations. The glandular metastases of epithelial cancers are more resistant than the primary lesions. For this reason it is advisable to operate when possible and, later, to irradiate the whole region. The percentage of cures is small. The authors' routine treatment for sarcoma of the tonsils consists of 180 or 200 kilovolts filter of 1 mm of copper, 40 cm distance from the skin and 1,500 roentgens on each field. As a rule, they give from 300 to 500 roentgens a day. In epithelial tumors of the oropharynx it is easier to cure the local lesion than the metastases with external radiations. For this reason, when the metastases are operable, it is still preferable to operate by a block dissection of the whole lymphatic system of the neck. It is necessary to dissect both sides and it is advisable to do this in two stages. Even after a good surgical dissection the whole region should be treated to prevent recurrences. The best two methods of external radiation are telecurietherapy and teleroentgenotherapy or the Coutard method. To get good results with the Coutard method it is necessary to use hard rays with the shortest wavelength possible, in order to improve the power of penetration and to increase the selective action on the cancer cells. To obtain such rays one should use at least 200 kilovolts and a filter of 2 mm of copper. With such a filter all the soft rays are absorbed and the lesions of the skin and of the subcutaneous tissue are reduced. The skin in

such a condition can stand 1,500 and even 2,000 roentgens. The distance between the target and the skin is 60 or 70 cm., and the intensity is no higher than 4 milliamperes. The patient should be irradiated at least two hours a day, 500 roentgens being delivered each day. The whole treatment must have a duration of three weeks or even more. During the last two years, in order to improve their roentgenologic results, the authors have used with some success injections of lipid extract of the brain, the thymus, the bone marrow and the spleen.

Journal of Physiology, London

79 1 120 (July 28) 1933

- Effect of Gonadectomy on Adrenal Thyroid and Pituitary Glands
Dorothy H. Andersen and Helen S. Kennedy—p. 1
Diffusion of Inorganic Phosphate into and out of Skeletal Muscles and Bones of the Frog M. Grace Eggleton—p. 31
Carotid Sinus Reflexes Influence of Central Blood Pressure and Blood Supply on Respiratory and Vasomotor Centers J. J. Bouckaert and C. Heymans—p. 49
Action of Veratrine Curare and Strychnine on Response of Medullated Nerve H. Fromherz—p. 67
Effect of Quaternary Ammonium Salts on Nerve S. L. Cowan and H. R. Ing—p. 75
Reactivity and Activity of Human Uterus at Various Stages of Pregnancy and at Parturition J. M. Robson—p. 83
Choline and Liver Fat in Diabetic Dogs C. H. Best G. C. Ferguson and J. M. Hershey—p. 94
Reversible Inexcitability of Tactile Endings in Skin Injury T. P. Feng—p. 103
Influence of Temperature on Rate of Excretion of Phenolsulphonethalein in the Frog E. M. Scarborough—p. 109
Histologic Changes in Bone Responsible for Action of Parathyroid Hormone on Calcium Metabolism of Rat L. I. Pugsley and H. Selye—p. 113
Capacity of Uterus of Rabbit to Respond to Prolonged Luteal Activity M. K. McPhail—p. 118

Journal of Tropical Medicine and Hygiene, London

36 185 200 (July 1) 1933

- The Advisability of Using in Laboratory Work Sugars Tested by Microbiologic Methods A. Castellani—p. 185
Chaulmoogra Oil and Its Derivatives in Treatment of Leprosy J. W. Tomb—p. 186
Some Polynesian Medical Superstitions Encountered in the Cook Islands S. M. Lambert—p. 189

Lancet, London

2 1 58 (July 1) 1933

- Cardiovascular Syphilis E. N. Chamberlain—p. 1
Radiation Treatment of Cancer of Mouth and Pharynx S. Cade—p. 4
Tuberculous Pericardial Effusion Case A. Adams and F. S. Hawkins—p. 12
*Cavernous Angioma of Maxilla Fatal Hemorrhage After Teeth Extraction R. A. Broderick with notes of similar nonfatal case reported by H. Round—p. 13
Idiopathic Steatorrhea of Adults Record of Two Cases W. A. Lister—p. 15
Observations on Relation Between the Pulmonary Artery and the Esophagus A. S. Hall—p. 18
Eviprin Intravenous Anesthetic R. Jarman and A. L. Abel—p. 18
Congenital Clubfoot Analysis of Deformity and Principles of Its Treatment A. L. McGregor—p. 20

Cavernous Angioma of Maxilla—Broderick reports a fatal case of cavernous angioma in the left superior maxilla of a girl aged 11, in whom on the first examination the left side of the face was enlarged and slightly bluish with a pulsating spot over the malar bone, there were four scars, two over the malar bone one near the inner canthus of the eye and one over the region of the facial artery. Examination of the mouth revealed a perfect denture containing twenty-eight noncarious well articulating teeth. The left maxilla was slightly expanded and the two premolar and molar teeth were loose but the gums were firm when the molar teeth were moved a little blood came from the sockets. On the second examination a month and a half later the teeth were looser. The child lost about 8 ounces of blood on two successive nights. This bleeding was apparently coming from the sockets of the molars. Roentgenograms were taken and models of the mouth obtained. The roentgenograms showed extreme absorption of the roots of the first molar tooth and less of the premolar and second molar. The hemorrhage had been controlled by pressure on the teeth. In view of this the external carotid artery had been tied. After the artery had been ligated it was noticed that the pulsation on the cheek had ceased and accordingly the wound was closed. When the first upper molar was

extracted there was an immediate gush of blood, which was checked with difficulty by a finger in the socket. A cotton plug soaked in phenolized resin and tannic acid was then put in the socket and a temporary splint of Stent's composition held over it. While this was firmly held in position there was no hemorrhage, but on the smallest movement it recommenced. It was then decided to open the wound, dissect out the common carotid and clamp it. This was done, and on removal of the splint and plug only a slight trickle of blood came from the socket, therefore it was decided to ligate the artery. This operation was performed and at the same time a piece of the sternomastoid muscle was cut away to serve as a plug to be stitched into place in the sockets. It was then decided to extract the second molar, plug the sockets with muscle and tightly stitch the wound. The moment the second molar was extracted there was a gush of blood, just as violent as the first. This was controlled with pressure with a finger and, although eventually plugs were fitted into each socket and stitched, the patient's heart and respiration ceased and efforts to restore them were unsuccessful.

Medical Journal of Australia, Sydney

1 757 784 (June 24) 1933

- An Address F. W. Fay—p. 757
Some Experiences in Treatment of Cancer of Uterine Cervix W. G. Cusaden—p. 760
*Treatment of Head Injuries A. E. Lee—p. 762
Pulmonary Tuberculosis with Particular Reference to Its Early Aspects D. R. W. Cowan—p. 765
Dissection or Diathermy of Tonsils? E. P. Dark—p. 771

2 1 32 (July 1) 1933

- Diabetic Survey E. Russell—p. 1
Spider Bite (Arachnidism) Survey of Its Occurrence in Australia with Case Histories W. W. Ingram and A. Musgrave—p. 10
Electrosurgery of Tonsils Some New Techniques A. J. Cahill—p. 15

Treatment of Head Injuries—According to Lee, the first obvious fact in treatment of head injuries is that there is a vast difference in the degree of severity of the injury. The most simple case in which a patient is admitted to the hospital in the recovery stage of a transitory concussion, needs no special therapeutic measures. Such a patient needs only to be put at rest, both mentally and physically. In the more severely affected patient, whose scalp has been injured and about whom a history of unconsciousness lasting five minutes or more is obtained, the scalp wound should not be sutured in a routine manner in the casualty room. In many cases the wound communicates with a compound fracture of the skull and perhaps with the underlying cerebral structures. Unless bleeding has to be controlled, only a first aid dressing should be applied before the patient is admitted to the hospital. The intelligent care of shock is the first and sole duty of the surgeon after the patient's admission. The application of heat and possibly the intravenous and subcutaneous administration of saline solution should be carried out. If a sedative is necessary, morphine should be withheld. When the shock factor is safely combated the presence of a raised intracranial tension should be determined by a lumbar puncture examination with pressure readings. If an increased pressure is present, lumbar drainage should be carried out. Dehydration should be encouraged by limiting the intake of fluids to 900 cc per day for the first few days and less for the weeks following. Mental and physical rest should be enjoined for three or four weeks or longer if necessary, and the associated scalp injuries should be dealt with as soon as the shock can be controlled. The author believes that, during the first twenty-four hours after the occurrence of a severe head injury, operation should not be undertaken except in the rare instance when an extradural hematoma increases so rapidly as to endanger life during that period. After the period of shock is passed, operative treatment may be carried out (1) as the treatment of a compound fracture of the skull, (2) to evacuate a hematoma presenting localizing symptoms, and (3) in severe cases of cerebral contusions which have resisted dehydration treatment. Some weeks or months following the injury operation may be advisable (1) to evacuate a chronic subdural hematoma (2) for the treatment of chronic localized arachnoidal adhesions and (3) for the relief of convulsions or for persistent physical symptoms which have resisted long periods of rest.

and dehydration. In patients presenting remote symptoms of head injury, a headache of a general dull discomfort, a localized headache and an intermittent headache of a general bursting character can be recognized.

Practitioner, London

131 1116 (July) 1933

- Management of the New Born Louise McIlroy—p. 1
Management and Care of the Premature Infant R. C. Jewesbury—p. 9
Congenital Malformations D. Browne—p. 20
Feeding of the New Born B. Myers—p. 33
Certain Infections and Disorders to Which the New Born Are Prone F. S. Langmead—p. 47
Jaundice in the New Born A. C. Hampson—p. 59
Perurethral Treatment of Enlarged Prostate F. McG. Loughnane—p. 71
*Roentgen Ray Sterilization for Uterine Hemorrhage Notes on the After History of Some Cases F. Hernaman Johnson—p. 83
Neuralgia R. V. Bradlow—p. 87
*Two Cases of Bacillus Alcaligenes Infection W. K. Anderson—p. 102

Uterine Hemorrhage—Hernaman-Johnson states that in order to destroy that particular function of the ovaries which is responsible for the menstrual cycle, a certain minimal quantity of radiation must be passed through them. The rays from the generating tube must first penetrate the overlying tissues. It has been ascertained that 30 per cent of the amount of x-rays necessary to cause a skin reaction is sufficient to produce the required effect on the ovaries of a woman in her fifth decade of life. With the high voltage roentgen apparatus now available from 20 to 30 per cent of the energy falling on the skin reaches the ovary in a patient of average size. It is theoretically possible therefore to sterilize an ovary with a single dose of penetrating x-rays with only temporary damage to the skin. The author uses two fields for each ovary—anterior and posterior. The amount of radiation falling on the skin is less than half of that required to produce an erythema. The two sides are done on consecutive days, and a month later the treatment is repeated with slight modifications. The author has used this technic for many years and has never seen the slightest change in the skin or any constitutional upset.

Bacillus Alcaligenes Infection—Anderson cites two cases which at first appeared to be severe cases of rheumatic fever with cardiac valvular and myocardial lesions associated with painful and swollen joints but not responding to salicylates. Blood cultures were taken and revealed the presence of *Bacillus alcaligenes*. Unfortunately, the organism was not looked for in the stools in the earlier stages of the infection though presumably it emanated from there. The acute infections were relieved by mercurochrome. One patient received one tablespoonful of a 1 per cent solution of mercurochrome in water between meals and the other half an ounce of the solution twice a day.

Chinese Medical Journal, Shanghai

47 545 636 (June) 1933

- Pneumococcal Lobar Pneumonia Clinical Study of Two Hundred and Forty Two Typed Cases C. J. Wu and T. Y. Chiu—p. 545
Roentgenologic Diagnosis of Chronic Appendicitis T. S. Jung and C. K. Hsieh—p. 560
Diagnosis of Acute Appendicitis Study of Ninety Eight Consecutive Cases J. K. Shen—p. 572
Injection Treatment of Varicose Veins T. D. Lee—p. 578
Immunity in Treponematoses in the Light of Experimental Evidence and Epidemiologic Phenomena C. M. Hasselmann—p. 584
Sickness Records of School Children in Peiping W. M. Li—p. 587
Sickness Important Cause of Absenteeism in Rural Schools C. C. Chen—p. 594
Investigation on Infant Mortality and Its Causes in Peiping Report Marion Yang and I. C. Yuan—p. 597
Cost of Various Types of Medical Services at Peiping Health Demonstration Station C. Y. Shen—p. 605

Japanese Journal of Obstetrics and Gynecology, Kyoto

16 83 182 (April) 1933

- Statistic Investigation of Uterine Myoma E. Terada—p. 84
Instance of Primary Ovarian Cancer with Elephantiasis Like Appearance Due to Its Cutaneous Metastasis E. Terada—p. 110
Ectopic Chorionepithelioma Malignum Complicated by Pregnancy E. Terada—p. 121
Statistical Study of Menstruation of Japanese Medical Students J. Kosakae, K. Kawanabe, Y. Kuraishi and A. Yamamura—p. 141
Value of Manual Treatment as Rapid Dilatation of Cervical Canal K. Minamikawa—p. 163
Instance of Osteogenesis Imperfecta Congenita Y. Katsu—p. 171
Vaginal Secretions and Their Significance to Puerperal Fever H. Takayama—p. 175

Revue Sud-Am de Med et de Chir, Paris

1 401 480 (June) 1933

- Solution of Problem of Feeding in Homes of Poor P. Escudero—p. 401
Tuberculosis of Mammary Gland P. Moura and D. Guilherme da Costa—p. 411
*Headaches Due to Disease of Verumontanum and Prostatic Utricle. A. Valerio—p. 424
*Dissociated High Paralysis of Brachial Plexus Following Antiscorpion Serum Therapy A. C. Pacheco e Silva—p. 429

Headaches and Urogenital Disturbances—Valerio states that chronic refractory headaches in males may originate in urogenital disturbances. He reports four cases in which chronic headache which had resisted all customary forms of local and general therapy including surgical and antisyphilitic therapy, yielded to the treatment of existing genital lesions. In the first case the genital lesion was a polyp of the prostatic utricle, in the second a purulent cyst of the prostatic utricle in the third an atrophy of the verumontanum and the prostatic utricle and in the fourth, a papilloma of the verumontanum and ulceration of several glandular orifices of the prostate. Impairment of the sexual function existed in all cases. Cure of the genital lesion in two cases by electrocoagulation and in two cases by fulguration, resulted in disappearance of the headaches together with restitution of the normal sexual function.

Paralysis of Brachial Plexus Following Antiscorpion Serum Therapy—Pacheco e Silva reports the case of a man aged 30 in whom the antiscorpion serum was injected at the level of the interscapular region on the left side. Two days after the injection generalized urticaria, headache, vomiting and diarrhea appeared followed by intense pains in the whole body particularly in the arms and shoulder. Gradually increasing muscular atrophy ended in inability to raise the left arm and difficulty in raising the right arm above the head. On neurologic examination, a pronounced atrophy of the muscles of the supraspinous and subspinous fossae was found, particularly on the left side. The homolateral deltoid and trapezius muscles and the rhomboid muscles also exhibited marked atrophy. On the right side the atrophy affected the inferior trapezius to a greater degree. The patient was unable to raise the left arm and, when he raised the right arm to shoulder level, he exhibited a winged scapula due to atrophy of the serratus major. The spinal fluid contained 5 leukocytes per cubic millimeter. The absence of sensory disturbances in connection with the affected muscles favors a lesion of the spinal nerve roots rather than of the spinal trunk. The patient had never received serum therapy before the injection that produced the paralysis.

Policlinico, Rome

40 421 496 (Aug. 15) 1933 Surgical Section

- Histologic Modifications and Functional Adaptation of Small Intestine After Colectomy M. Canavero—p. 421
Diagnosis and Treatment of Gastrocolic Fistulas C. Colucci—p. 439
Appendicitis and Intestinal Occlusion G. Culmone—p. 447
Contribution to Hemophilic Arthropathy G. Gucci—p. 462
Calcified Lymphatic Glands Around Gallbladder R. Memmi—p. 474
*New Method of Operative Treatment of Echinococcus Cysts of Lung P. Valdoni—p. 484

Operative Treatment of Echinococcus Cysts of Lung—Valdoni treated two patients with pleural echinococcus cyst, one with a central suppurating cyst opening into the bronchi and another with two peripheral nonsuppurating cysts. The operative technic consists of extrapleural filling to treat pleural adhesions without opening the pleura, in order to collapse the lung between the cysts and the pleural surface. This collapse easily attained in nonruptured echinococcosis reduces the parenchyma between the cysts and the surface of the lung to an atelectatic stratum with closed bronchi and obliterated vessels so as to avoid during the subsequent open operation the danger of aspiration or introduction of air or liquid into the circulation. The author prefers petrolatum to the sponge or iodoform gauze for filling. At least 400 Gm is used according to Beer's formula. Local anesthesia is produced by 2 cc of a 1 per cent solution of procaine hydrochloride. The first operative stage consists of separating the pleura from the thoracic fascia after which the petrolatum is introduced into the cavity at a temperature of about 38 C (104 F). Exact localization is important in order that the filling may correspond to the projection of the cysts on the thoracic wall under

repeated control of roentgenoscopic examination. In the second stage, twenty days later, the incision is reopened and the petro-lum filling is removed, the cyst is aspirated with a needle and syringe, the syringe is replaced by an adapter furnishing diathermic current to the needle which is used as an electric knife to incise the pulmonary tissue for about 15 cm, the membrane of the cyst is removed with forceps, cleaning of the cystic cavity is completed with a small tampon and a rubber drain is introduced. The extrapleural filling this time is done with strips of iodoform gauze of sufficient amount to keep the cystic cavity collapsed. The wound is sutured except for a small orifice in the lower angle through which protrude the end of a gauze plug and the drainage tube. After from two to three days the tube is removed. The gauze is removed after a week, when communication with the cavity is already closed. The extrapleural filling is repeated with less gauze and continued until roentgen examination shows the complete disappearance of the cavity or its maximum reduction.

Deutsche medizinische Wochenschrift, Leipzig

59 1275 1312 (Aug 18) 1933

- Problem of Neurasthenia and Hysteria K Schneider—p 1275
Action of Athletic Activity on Circulatory and Respiratory Organs and on Metabolism H Rautmann—p 1278
Causal Factors of Cardiac Insufficiency Marianne Wallenberg—p 1280
*Allergic Manifestations Caused by Stimulants and Their Treatment M J Gutmann—p 1281
Serologic Diagnosis of Syphilis K H Dambrowsky—p 1283
Health and Truth V von Weizsäcker—p 1284
Roentgenologic Demonstrability of Smallest Glass Splinters A Kahlstorf—p 1286

Allergic Manifestations Caused by Stimulants—Discussing the allergens in stimulants such as wine, beer, coffee and tobacco, Gutmann states that not the alcohol nor the caffeine but rather other substances contained in the stimulants are the carriers of the allergens. He discusses in detail his studies on beer. Allergic disturbances that have been noted following the drinking of beer are itching, urticaria-like conditions, a feeling of fullness, acidity of the stomach, nausea, diarrhea and colic-like manifestations with severe spasms that sometimes resemble ileus, also migraine, coryza and asthmatic conditions. Since every substance contained in beer may act as an allergen, the offensive factor must be determined. The author describes several test methods that may be employed. In one series of tests he detected a constituent of hops, lupulin, as the allergen, while in other tests he found that yeast was the eliciting factor of severe allergic intestinal spasms. For the prevention of allergic disturbances the author suggests that, if the patient does not want to abstain from beer entirely, it should be determined which beer he tolerates and which not, for some allergic patients are sensitive only to certain beers. He points out that alcohol sometimes exacerbates the allergic condition and that it would be advisable to recommend to allergic patients an alcohol free beer, which moreover has the advantage that it is not made with yeast and therefore could be recommended to those persons who have a hypersusceptibility to yeast.

Deutsches Archiv für klinische Medizin, Berlin

175 385 504 (Aug 4) 1933

- Elimination of Urinary Pigments and Renal Function R Enger and P Preusschoff—p 385
Electrocardiograms of Coronary Thrombosis J von Boros and J von Fernbach—p 442
*New Hereditary Blood Disease Constitutional Thrombopathy E A von Willebrand and R Jürgens—p 453
Nocturia A Jores—p 484

Constitutional Thrombopathy—Bleeding disease without thrombopenia was observed by von Willebrand in a group of families in Finland, and the studies on the members of these families, carried on by him and by Jürgens, are reported in detail. The disturbance, designated as constitutional thrombopathy, is familial and hereditary, and the genealogical trees indicate that it is transmitted by the dominant gene. It seems that the dominance can sometimes be suppressed but whether the gene is found in an autosome or in an accessory chromosome has not been determined. The latter assumption is supported by the occurrence of two types of bleeders among the women and of only one type among the men and also by the fact that the greater number of diseased women were detected in the two consanguineous marriages. However the fact that a

healthy father had a son who was a bleeder, and the records of another family contradict this hypothesis. Occasionally the disorder becomes manifest during the nursing age, while in other families it does not become evident until the period of puberty, and in later life, particularly after the climacteric, the bleeding tendency frequently decreases again. Both sexes are subject to the disturbance, but in women it is generally more severe than in men. The hemorrhages may occur in the skin or in the mucous membranes, the site of predilection being the nose, but hemorrhages from the gums are also comparatively frequent and even the female genitalia, the gastro-intestinal tract and the urinary tract may become involved, and there is prolonged bleeding after injuries. The majority of the patients are of the asthenic type and appear nervous. Inbreeding seems to play an important part in the pathogenesis. The white and red blood pictures reveal no essential changes. The number and shape of the blood platelets are normal, but there is an increase in giant platelets. The agglutination of the platelets is retarded. The "thrombosis time," determined in the capillary thrombometer, is prolonged, but coagulation and retraction are normal. The bleeding time is greatly prolonged, which is considered especially characteristic for constitutional thrombopathy. The vascular factor is of minor importance. The treatment is mostly symptomatic and follows largely the general rules that govern the therapy of hemorrhagic diatheses. In severe cases, blood transfusion is resorted to.

Klinische Wochenschrift, Berlin

12 1273 1312 (Aug 19) 1933 Partial Index

- Disturbances in Lipoid Metabolism in Hereditary Diseases of Nervous System W Spielmeyer—p 1273
Light Permeability and Metabolism of Active Muscle E von Baeyer—p 1278
Adsorption, Elution and Adsorptive Separation of Haptens H Rudy—p 1279
*Serologic Diagnosis of Tuberculosis A Beck and O Schedtler—p 1280
*Chronic Intermittent Gastric Volvulus Berta Aschner—p 1283
Iodine Metabolism in Diseases of Thyroid L Scheffer—p 1285
Bronchial Asthma and Influenza K Hajos—p 1287

Serologic Diagnosis of Tuberculosis—Favorable results obtained by others with the complement fixation test that uses the antigen of Witebsky, Klingenstein and Kuhn induced Beck and Schedtler to employ this test and, in order to check the results of the complement fixation test by a simple seroreaction, they performed the precipitation test of Lehmann-Facijs-Loeschke. They made these tests on 151 patients with tuberculosis and in 209 control cases. They state that the complement fixation test with the antigen of Witebsky-Klingenstein-Kuhn gives satisfactory results as regards the specificity and the constancy of its outcome. With 70.2 per cent of positive reactions in patients with pulmonary tuberculosis and with 35.5 per cent of positive reactions in extrapulmonary tuberculosis, the inclusiveness obtained by the authors was somewhat less than that reported by other investigators. No definite conclusions have been reached as yet about the prognostic significance of the test. The precipitation reaction according to Lehmann-Facijs-Loeschke gave a higher percentage of positive results than did the complement fixation test in pulmonary as well as in extrapulmonary tuberculosis, but in specificity it was not equal to the complement fixation test. The authors recommend that both tests should be further investigated on a large scale.

Chronic Intermittent Gastric Volvulus—Aschner describes the history of a girl who asked medical advice on account of dyspeptic disturbances. After eating, she had a feeling of tension in the epigastrium and there were frequent eructations. She also had poor appetite and was troubled with constipation. The family history disclosed that the father and two brothers of the girl had intestinal ulcers. Examination of the gastric contents did not favor an ulcer but made an anacid gastritis more probable. The roentgen examination revealed a partial volvulus of the stomach. A roentgenoscopy three weeks later showed that the gastric volvulus had disappeared. Later the disturbances reappeared after intervals of several weeks or months, which indicates that the volvulus was of the chronic intermittent type. The symptoms being comparatively mild there was no necessity for an operation. In this case congenital anomalies were the cause and were evidenced by congenital

abnormalities in the mesogastrium and particularly by an abnormal length of the hepatoduodenal ligament. The author considers these mesenteric anomalies the necessary predisposition for the development of idiopathic gastric volvulus. She states that, in some instances, it may be possible to assume the existence of a chronic intermittent volvulus of the stomach before the roentgenologic examination.

Medizinische Klinik, Berlin

29 1131 1162 (Aug 18) 1933

- Procedure of Examination for Syphilis During Consultation W Schonfeld—p 1131
Retraction Nystagmus E Grunper and J Kubik—p 1134
*Nutritional Disturbances Following Gastric Resection H Dihold—p 1138
Heart Beat S Kirkovic—p 1143
*Borderline Ray Therapy (According to Bucky) in Internal Diseases E Last—p 1145
Human Double Monster Fink and Winter—p 1146
Vitamin A and Visual Purple F Hurovitz—p 1148
Experimental Proofs for Dependence of Metabolic Condition from Nutrition H Langecker—p 1149

Nutritional Disturbances Following Gastric Resection—In nutritional disturbances that developed several months after gastric resection (Billroth II), Dihold observed various changes in the remaining stomach, the small intestine, the large intestine and the pancreas. Discussing the diagnosis of these changes, he points out that the anamnesis, the clinical aspects, and examination of the blood, the gastric juice, the urine and the stool frequently allowed an exact anatomic and functional diagnosis to be made, especially if all the changes were considered together. Roentgenologic examination was also necessary in some cases, but the clinical observation could never be replaced by roentgen examination, because even in cases presenting large anatomic changes clinical observation was necessary for the interpretation of the roentgen picture. The author calls attention to the hypoglycemic attacks that may develop in persons who have undergone resection of the stomach following administration of carbohydrates after injection of insulin (even of comparatively small quantities) and after simultaneous administration of carbohydrates and insulin. Hypoglycemic attacks, as observed in these patients, are exhibited with the same severity only in diabetic patients with hypersusceptibility to insulin. The author emphasizes that the possibility of hypoglycemic changes after gastric resection should be kept in mind, since, if this condition is overlooked, valuable time may be lost for treatment. The dietary treatments for the various conditions are described and evaluated.

Borderline Ray Therapy in Internal Diseases—Bucky's borderline rays were employed by Last in the treatment of various internal disorders, particularly those of a functional nature. He points out that since the skin has been found important for a number of vital functions, the general therapy by means of borderline rays, that is, the therapeutic action of rays through the skin can no longer be questioned. His report is based on observations made in the course of several years. He found the borderline rays helpful particularly in menopausal disturbances. Of 174 cases, only 52 per cent were not favorably influenced. However, it appears that the efficacy of these rays in menopausal disorders is dependent on the presence of remnants of ovarian activity, because in the menopausal disturbances developing after the surgical removal of both ovaries the general therapy with borderline rays produced only temporary improvement. The author tried this therapy also in some forms of hyperthyroidism and noted a considerable reduction in the basal metabolic rates. In disturbances of the sympathetic nervous system, especially those of convalescence after influenza, this general therapy was found to counteract the predominating vasomotor disorders and the weakening sweats. It proved effective in eight out of twenty patients with nervous bronchial asthma, and the vasoneurotic component of anginous attacks likewise yielded to this treatment. The author also obtained favorable results with the borderline ray treatment of gastric and duodenal ulcer already recommended by Bucky. The aim was of course only to counteract the pains by reducing the spastic condition of the gastric muscles as the healing of the anatomic lesion could hardly be expected from the irradiation. The author hopes that the favorable results obtained by him will stimulate further work with this form of ray therapy.

Monatsschrift f Geburtshilfe u Gynäkologie,

95 1128 (Aug) 1933

- Constitutional Differences in Hungarian and German Women
Special Consideration of Injuries of Soft Parts During
Z von Szathmari—p 1
Histology of Ovary in Menstrual Anomalies H Hauptmann—
*Simplification of Zondek-Aschheim Reaction and Its Practice
A M Agronow—p 20
Manual Detachment of Placenta W Ssolowjew—p 34
Etiology of Puerperal Fever Juse Lotte Horn—p 43
Spondylolisthesis of Traumatic Origin F Gajzago—p 54
Significance of Chills for Prognosis of Puerperal Fever J Ba
—p 56
Case of Calcified Myoma During Pregnancy, Delivery and Pu
K Fuge—p 66
Experimental Investigations on Amniogenic Pathogenesis of V
tions H Hellner—p 70
Hemorrhages of Corpus Uteri During Senility W Schultz—
Primary Bilateral Tubal Carcinoma L Danckwardt—p 84
Question of Carcinoma of Stump K Haun—p 91

Simplification of Aschheim-Zondek Reaction—now says that the original method of Zondek-Aschheim disadvantage of employing only female white mice, a that makes it necessary to keep large numbers of m the females used in the test are withdrawn from pro The author employed the modification recommended by Hinglais and Simonet, who use male instead of female. One of two male mice of the same litter and of the same is given, for five or six successive days, injections of 0.5 to 1 cc of the urine that is to be tested. The second mouse serves as control. Both mice are killed two hours after the first has received the last injection. The of the accessory sex glands and of the glans penis are compared. The accessory sex glands located immediately the urinary bladder become considerably enlarged under influence of urine from a pregnant woman. The increase the size and weight of the glans penis is not so reliable indicator, for its size shows normally considerable fluctuation and consequently the author gives more attention to the change in the accessory sex glands. He tested the urine of six persons, most of them (thirty-seven) pregnant women, the others had amenorrhea, fibromyoma, prolapse of the adnexa, ovarian cysts, or cancer of the uterus, and the persons were men. Positive reactions were obtained in the case of pregnant women and of patients with cancer of the uterus. Thus the results are just as reliable as obtained with the original method. However, certain gradations that can be detected with the original Aschheim-Zondek are not possible with the simplified procedure, and the original method still retains its significance for research, but for routine pregnancy tests, the author considers the modified more practical and more economical.

Munchener medizinische Wochenschrift, München

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- Irrigation of Stomach in Gastric Surgery A Krecke—p 1237
*Submammary Temperature as Criterion of Lactation Capacity M and Z Djokic—p 1238
Backache Caused by Loosening of Sacro Iliac Joints K Bragg
—p 1240
Insulin Allergy and Its Influence on Metabolic Condition in Diabetes
F Kraupl—p 1246
Treatment of Rheumatic Adhesive Pericarditis H W Passler
—p 1247
Tearing of Uterus by External Force in Advanced Pregnancy
Orthner—p 1248
*Histamine Treatment of Painful Muscular and Articular Disturbances
A Fieber—p 1249
Experiences with Tar Sulphur Powder in Treatment of Cutaneous Diseases H Saufferlin—p 1250
Air Pressure Bandage for Fractures of Clavicle H Niessen—p
Estimated Figure of Mental Defectives in Germany H Strecker
—p 1254

Submammary Temperature—Zelc and Djokic call attention to the fact that a normally lactating breast has a higher temperature than mammary glands with a deficient secretory function and they cite other observers who have noted this. The submammary temperature is estimated in comparison with the axillary and the rectal or sublingual. The authors performed such tests on nonpregnant pregnant and lactating women and found that during the first half of the pregnancy the submammary temperature is the same as the axillary but that during the second half it is higher than the axillary temperature and approaches

the rectal or the sublingual During the puerperium and during lactation, monothermia develops, that is, the submammary and the rectal or sublingual temperatures become equalized It was also noted that the act of nursing does not cause changes in the submammary temperature If the two breasts are of the same development, their temperature either is the same or differs only slightly The authors think that measuring of the temperature of the mammary glands is the simplest method for the determination of the functional capacity of the mammary glands The nearer the submammary temperature comes to the rectal or to the sublingual, the more favorable are the prospects for the lactating capacity If at the beginning of lactation the submammary temperature is higher than the axillary and approaches the rectal or the sublingual, the mother should be encouraged to nurse her child although the milk supply may at first seem too small In many of these cases the hypogalactia is the result of insufficient evacuation of the mammary glands, and the mother should be told to see to it that the breasts are completely emptied However, in cases in which the rectal or the sublingual temperatures are constantly considerably higher (more than 1 degree C, or 18 degrees F) than the submammary temperature, the lactating activity is slight, and even artificial evacuation of the breasts does not stimulate lactation in these cases But if the submammary temperature has a tendency to increase so as to become nearly equal to the rectal temperature, the lactation process has a favorable prognosis

Histamine Treatment of Muscular and Articular Disturbances—Faber employed histamine treatment in acute and chronic myalgias, sciatic neuralgias, acute and chronic arthralgias, and posttraumatic or postoperative local circulatory disturbances In painful conditions limited to a small area, he employed Deutsch's original method of histamine therapy, that is, he gave intracutaneous injections of from 0.1 to 0.3 cc. of a 1:1,000 solution of histamine In order to increase the efficacy of these intracutaneous injections, the author applied a galvanic current of from 4 to 7 milliamperes for about five minutes Of the twenty-two patients treated in this manner, eighteen were entirely free from complaints after the first treatment and two others were considerably improved However, he emphasizes that the treatment is suitable only for cases in which the painfulness is limited to a small area The majority of his patients were treated with a histamine ointment At first the application of the ointment was combined with iontophoresis, but later he resorted to iontophoresis only in those cases in which scarification was contraindicated his usual method then consisting ofunction following scarification with a wheal needle or Ponndorf's scarifier He asserts that this simple method gave the best results The treatment was generally well tolerated, and the author considers neurasthenia with vasolability and allergy the only contraindications He states that the results of histamine treatment were not convincing in chronic arthropathies and in sciatic disturbances, but that in acute and chronic myalgias acute arthralgias, periostalgias and postoperative and posttraumatic circulatory disturbances of the extremities he obtained excellent results

Zentralblatt für Gynäkologie, Leipzig

57 1921-1934 (Aug. 19) 1933

- Crearest Efficiency of Colposcopic Diagnosis of Carcinoma H. Hinselmann—p. 1922
Spontaneous Rupture of Pregnant Uterus G. Hromádský—p. 1926
Etiology of Ectopic Pregnancy L. Kraul—p. 1928
Normal Pregnancy Following Bilateral Removal of Uterine Tubes A. P. Werhatsky—p. 1931
My Curative Method for Puerperal Sepsis with Local Intraparenchymal Vaccination F. Spirito—p. 1931
Changing Character of Successive Metastases in Myosarcoma of Uterus A. Christophorakos—p. 1935
Treatment of Inoperable Prolapse A. I. Scherbak—p. 1940

Intraparenchymal Vaccination in Puerperal Sepsis—Spirito employs a polyvalent vaccine containing streptococci, staphylococci, gonococci and colon bacilli He makes the injection by means of a Pravaz syringe which enables him to introduce the vaccine deep into the soft parenchyma of the vaginal part of the cervix The injection is repeated every third day and the single dose is usually one third cubic centimeter Each injection is followed by a general reaction characterized by an increase in temperature The intensity of the reactions decreases in the successive injections and the treat-

ment is continued until there is no longer a reaction According to the degree of the reaction following the first injection, the doses of the subsequent injections either remain the same or are somewhat increased The author emphasizes that the results of the treatment are the more favorable the earlier the treatment is begun The author states that the vaccine injected into the uterus is more effective than the intramuscularly administered vaccine because it enters the organism by the same route as did the pathogenic organisms and thus finds more favorable conditions for its entry and absorption

Changing Character of Metastases in Myosarcoma—Christophorakos relates the history of a woman, aged 58, in whom the uterus and the adnexa were removed on account of uterine hemorrhages and of myoma The microscopic examination of the specimen revealed myofibroma with areas of deficient maturity, and sarcoma was suspected In the course of eighteen months a large tumor developed in the lower part of the abdomen The histologic examination of the extirpated tumor disclosed an edematous fibroma, and there were no indications of malignant degeneration Ten months later a new operation became necessary because a tumor of the size of two fists had developed This one proved to be a fibromyoma and again there were no signs of malignant degeneration Six months after this intervention a fourth operation became necessary, and this time the examination disclosed a polymorphocellular sarcoma that in some portions showed the structure of a fibromyoma New metastases and cachexia followed this intervention and the patient died two years later The unique character of this case, in which the removal of a sarcoma was followed by two relapses of benign character and in which only the third relapse showed a reversion to malignity, was the reason for reporting this case

Treatment of Inoperable Prolapse—Scherbak admits that the operative treatment of prolapse of the genitalia is the most effective but points out that there are some patients who decline a surgical intervention or are unsuitable for such treatment, and in these pessary treatment has to be resorted to He shows that he obtained good results with a modification of Rosenfeld's funnel pessary or of Menge's pessary He observed that these funnel pessaries function properly only if the total height of the pessary is at least from 1 to 1.5 cm. greater than the diameter of the cup portion, so that the end of the stem protrudes a little from the vaginal opening He explains the mechanism of action of this pessary and states that at present it is giving good results in the treatment of twelve women between the ages of 60 and 85, who for various reasons could not be operated on, and that all feel greatly relieved

Novyy Khirurgicheskiy Arkhiv, Dnepropetrovsk

28 1144 (No. 109) 1933

- Nature of Morbid Symptom Complexes in Trauma of Nerve Trunks M. S. Skoblo—p. 19
Local Anesthesia in Fractures B. A. Petrov—p. 33
Treatment of Malignant Conditions of Tonsils A. O. Vereshchinskiy—p. 44
Surgery of Tumors of Spinal Cord P. S. Babitskiy—p. 54
In Defense of Muscle Sign of Volkovich B. B. Beyzman—p. 75
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Universal Rheostat for Feeding of Low Voltage Medical Apparatus M. A. Derzhavets—p. 88
Stomach Perforation in Paracentesis of the Abdomen for Ascites A. A. Somov—p. 91
Diagnostic Errors in Abdominal Tumors A. S. Fegorov—p. 93
Horseshoe Kidney and H. miniphectomy for Tuberculosis of One Half D. O. Alshstein—p. 94
Heyle's Operation for Hydrocephalus I. E. Kartava—p. 96

Heyle's Operation for Hydrocephalus—Kartava calls attention to the fact that attempts at surgical treatment of hydrocephalus have been unsuccessful thus far He performed the Heyle operation which consists of an anastomosis of the dura mater to the ureter, in a patient aged 16 months Cerebrospinal puncture established it to be an instance of a communicating hydrocephalus The head was unusually large presenting a circumference of 91 cm. A one stage operation was carried out under ether anesthesia The left kidney was removed and the ureter was dissected out for a distance of about 6 cm. Next, a laminectomy involving the third and fourth lumbar vertebrae was performed The freed ureter was placed in a muscular tunnel made by a longitudinal sectioning of the long muscles

of the spine. The pelvis of the kidney was sutured to the dura mater, the latter incised, and an anastomosis between the two carried out. The immediate postoperative course was distinguished by an almost continuous micturition and a marked improvement in all the symptoms. On the fourteenth day the circumference of the head diminished by 13 cm. The child died rather suddenly on the eighteenth day of a cause that could not be ascertained. The author concludes on the basis of his own and twelve other cases in the Russian literature that the operation proposed by Heyle in 1925 accomplishes an effective drainage of the ventricles, that the patients tolerate the operation quite well, and that the immediate results are quite gratifying.

Sovetskaya Khirurgiya, Moscow

4 357 500 (No. 34) 1933 Partial Index

- Prophylaxis of Suppuration by Means of Surgical Treatment of Wounds N. D. Florinskiy—p. 359
 Early Diagnosis of Malignant Tumors of Kidney P. M. Tronshteyn—p. 363
 *Traumatic Injury to Kidney M. C. Kupershiyak—p. 367
 Elephantiasis of External Genitalia and Its Operative Treatment V. I. Sapozhnikov—p. 376
 Appendiceal Stump After Appendectomy L. M. Vlasovich and A. S. Rovnov—p. 397
 Symptomatology of Appendicitis N. A. Sinkevich—p. 403
 Fractures of First Metacarpal Bone and Its Treatment B. P. Divnogorskiy and I. N. Rybushkin—p. 464
 *Bilateral Inguinal Hernia with Unusual Contents Case A. A. Busalov—p. 478

Traumatic Injury to Kidney—Kupershiyak states that traumatic injuries of the kidneys are rather common and occur more frequently as a result of traffic accidents than in the course of industrial occupations. Intrapelvic tension is not of great moment, since under normal conditions the renal pelvis is not distended. The twelfth rib is the most important immediate traumatizing factor. Trauma to renal tissue is to be considered as one of the many causes of inflammatory and obstructive lesions as well as of urolithiasis. The treatment of renal trauma should be conservative. Operative intervention is indicated only in the presence of grave symptoms. Its aim, however, is to preserve renal tissue as far as is possible. Small tears are to be sutured, tearing off of a pole is treated by a wedge shaped resection and suture. Nephrectomy is justified only when these operations cannot be carried out.

Bilateral Inguinal Hernia with Unusual Contents—Busalov's patient was a woman, aged 36, presenting a bilateral inguinal hernia. She had a well developed body, fully developed breasts and a typical female pelvis, but no growth of pubic hair. The large as well as the minor pudic lips were poorly developed, but the clitoris was well developed. On vaginal examination, no evidence of cervix, uterus or adnexa was found. The vagina ended in a blind sac. At operation the exposed right inguinal hernial sac contained a structure which was identified as a rudimentary uterine horn. Adherent to its lateral celiac aspect was a structure which on inspection resembled a testicle. From the opposite lateral surface of the horn ran what appeared to be the broad ligament containing the round ligament. The latter pierced the hernial sac and ended in the tissues of the labium majus. On the supposition that a state of true hermaphroditism existed here, the author removed the testicle with the uterine horn. Exposure of the left inguinal canal revealed an identical picture. The hernial sac likewise contained a uterine horn with a sexual gland attached to it. The latter was separated from the horn and replaced on its pedicle into the peritoneal cavity. The horn was resected. Histologic study of the sex gland removed from the right side proved it to be a testicle. The author concludes that the case is an instance of bilateral hermaphroditism, an anomaly of inclusion of male sexual glands in a female subject. The hormone products of these glands were apparently neutralized to a considerable extent by the activity of the patient's female hormone system. The absence of a normal uterus is explained on the basis of failure of development of the müllerian ducts. These were completed in their caudal end but the proximal ends failed to unite each giving rise to a uterine horn. The incomplete short round ligament pulled the uterine horns to the inguinal region. The effect of constant pull of the elastic muscle fibers on the lateral fossa resulted in the formation of a hernia. The author could not find a similar case in the literature available to him.

Hospitaltidende, Copenhagen

76 793 804 (July 20) 1933

*Aseptic Traumatic Meningitis O. Bouet—p. 793

Aseptic Traumatic Meningitis—In Bouet's three cases in children aged respectively 2, 6 and 14 years, symptoms of meningitis set in from twenty-four to forty-eight hours after trauma of the head. The spinal fluid showed mainly polymorphonuclear leukocytes in two cases, monocytes in one, and bacteria in none. There was increase in the pressure of the fluid. Repeated lumbar puncture was followed by abatement of the symptoms and recovery. Cases of benign meningitis after trauma of the head are cited from the literature.

76 805 816 (July 27) 1933

Electrocoagulation in Hypertrophy of Prostate E. Groth Petersen—p. 805

Electrocoagulation in Hypertrophy of Prostate—Groth-Petersen says that improvement in the results of treatment of prostatic hypertrophy depends mainly on more prostatectomies in the favorable stage and reduction of the operative mortality by strict selection of operable cases. The stricter this choice, the greater the number of patients referred for palliative treatment. For these patients endo urethral electrocoagulation seems to be of great value and preferable to cystostomy or catheter life. The treatment is well borne and the immediate results show clinical recovery in a large number of cases. Little is as yet known as to the permanence of recovery.

76 829 840 (Aug. 10) 1933

Iccular Case of Fracture of Jaw M. Melchior—p. 829

*Recurring Histologically Benign Tumor of Breast Case E. Husted—p. 835

Recurring, Histologically Benign Tumor of Breast—The tumor in Husted's case, which appeared as a typical fibroadenoma, recurred the first time as a fibro-adenoma, the second time as a fibroma, and the third time as a fibroma or possibly a fibrosarcoma. There were no metastases. Following excision of the last tumor, roentgen treatment was given, examination even months after the end of the treatment showed no recurrence or metastases.

Hygiea, Stockholm

95 545 608 (Aug. 15) 1933

*Epidemiology and Etiology of Inguinal Lymphogranuloma S. Hellerstrom and E. Wassen—p. 545

Inguinal Lymphogranuloma—Hellerstrom's discussion of the epidemiology of this disease is based on the literature and on answers to questionnaires in 1,636 cases of inguinal lymphogranuloma and 215 of esthiomene. From his review of recent experimental observations on the etiology of inguinal lymphogranuloma, Wassen concludes that it is an infectious disease of distinct entity, which is practically 100 per cent transferable to monkeys and to which even mice are susceptible. The susceptibility of guinea-pigs to the infection has not been established. The virus, of marked lymphotropic nature, is in all probability invisible and filtrable. The virus can be demonstrated in the regional lymph nodes in man shortly after infection and under certain conditions may be found after several years.

Ugeskrift for Læger, Copenhagen

95 879 894 (Aug. 17) 1933

*Undulant Fever and Beginning Pulmonary Tuberculosis A. Frølich—p. 879

Disease of the Ear in Infection with Bang's Bacillus H. Videbeck—p. 884

Supravital Staining in Solution of Salt with Constant pH of 6.6 M. Olesen and O. Thomsen—p. 886

New Vein Cannula for Permanent Intravenous Infusion K. K. Ortmann—p. 887

Undulant Fever and Beginning Pulmonary Tuberculosis—Frølich reports fifteen cases referred for sanatorium treatment or for special examination for pulmonary tuberculosis, in thirteen of which undulant fever was established. He says that, while there is marked similarity in the symptomatology of undulant fever and of beginning tuberculosis, the roentgenogram of the lungs and the bacillary observations, and usually also the stethoscopic results are negative in undulant fever, in the diagnosis of which the patient's history also is of importance.

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PROSTATIC RESECTION AND SURGICAL PROSTATECTOMY

COMPARISON OF IMMEDIATE RESULTS IN TWO
EQUAL CONSECUTIVE SERIES OF CASES

CHAIRMAN'S ADDRESS

N G ALCOCK, MD
IOWA CITY

A year ago this month at the American Urological Association meeting at Toronto I summarized my first ten months' experience with transurethral prostatic resection, reporting 175 cases. During the past year I have continued to handle prostatic cases by this method and the total number is now considerably over 500. The added experience gives me no reason to retract any of the statements that I made in my original report or to minimize the dangers and difficulties to which I then called attention. Many of the things that were expressed as opinions have now become quite firm convictions and I believe that I can now state that so far as I myself am concerned I will continue to do prostatic resections rather than surgical prostatectomies until some better method is at hand.

As experience has accumulated, troubles and tribulations have become very much less, the time of resection has very much diminished, the amount of tissue removed has increased, the course of the patients has become much more smooth and the results have been more certain and much more satisfactory.

The methods that I employ of handling resection patients have changed in only a few respects. One innovation is that I am now having air cystograms taken as a routine, and urethrograms with jelly made of iodized oil, before and after resection, and this procedure is invaluable. Another change is that more and more of the operations are being purposely done in two sittings rather than one and I think that there are very definite advantages in so doing. In many cases in which it has been definitely planned to do the operation in two sittings, the functional result following the first resection has been so satisfactory that a second resection was not necessary. The indication for the second resection is based largely on the functional result and the postoperative cysto-urethrogram. Another point in this connection that should be stressed is the fact that the second resection is always easier to do than the first and the tissue can be removed in larger quantities and more rapidly than at the first sitting.

In order to evaluate the procedure of resection I am making a comparison of the results obtained in 400 consecutive prostatectomies that I have done. It is extremely difficult in any type of prostatic surgery to

compare the results of one man with the results of another, as many of the factors will be unequal. For instance, if the bulk of one man's patients is made up of charity cases, his mortality rate will be bound to be comparatively high, while if his cases are all private patients his mortality rate should be only a fraction of that of the other man. Then, too, urologists can roughly be divided into two groups on the basis of indication for prostatectomy. One group advocates the early removal of the prostate while the other and more conservative group believes it should not be attacked surgically until it is producing definite damage. In the case of the first group the mortality rate will be low but prostatectomies will probably be done that time might have proved unnecessary, while with the second group the mortality rate will be higher and probably some of the fatal results would not have been fatal had the patient dropped into the hands of the first group. But these more conservative men will, of course, do no unnecessary prostatectomies. The thing balances itself quite well and I have no quarrel with either group, but I belong to the second. Then, too, it is quite unfortunate, yet it is a definite fact, that there are many and quite elastic methods of estimating mortality in prostatectomy.

Resections are done in many cases in which a prostatectomy would not be indicated and I refer here to bars, contractures, small median lobes, and so-called prophylactic prostatectomies. It would, of course, be unfair to have a series of resections diluted by these excellent risk cases and then compare those results with the results of real prostatectomies. In order, therefore, to eliminate this inequality I have not included in the 400 consecutive cases of resection any bars, contractures or small median lobes, or any cases in which I would not have formerly recommended a surgical prostatectomy. In other words, in every one of these 400 resections I would have formerly recommended a prostatectomy. Therefore here are two groups of cases equal in number, having the same geographic distribution and coming from the same strata of life, handled in the same hospital by the same medical, surgical and nursing staffs, all factors being as nearly alike as possible except the method of operation. I do not know how a more fair comparison could be made. What unavoidable inequalities there are I think are entirely in favor of prostatectomy.

The first question that arises is Which cases can be done by the resection method and which cases must be left for surgical prostatectomy? This is a very difficult question to answer and it is largely a personal matter. Ninety per cent of the result of resection depends on the man who is doing it and I think the same thing will apply in the answer to this question. I am convinced that with certain very limited reservations the size of the gland does not determine the

question of resection or prostatectomy. Of course, if the instrument cannot be introduced into the bladder a resection cannot be done. There were four such cases. There is, however, one very small group of cases in which I have found that it is quite useless for me to do a resection. Those are the cases in which the enlargement is considerable and is confined to the space between the two sphincter muscles. I have had four such cases. The easiest cases to do by resection, and the ones with the best assurance of good functional results, are those in which the obstruction is due largely, or almost entirely, to a very discrete and almost wholly intravesical median lobe, and it does not make much difference as to what the size of this lobe may be. The most difficult cases to do are those in which large amounts of intra-urethral lateral lobes must be removed.

Only 4 per cent of the prostatectomies were carcinomas. This small percentage, of course, was due to the fact that prostatectomies were not being done in carcinoma cases, whereas, resections on malignant glands have been done as a routine and the percentage in resections is 19.

TABLE 1—General Summary

	Prostatectomies		Resections	
	Number	Per Cent	Number	Per Cent
Hypertrophies	375	90.0	324	81.0
Carcinomas	25	4.0	76	19.0
Age				
90 to 100	0	0.0	1	0
80 to 90	15	3.7	25	6.2
70 to 80	136	34.0	231	58.6
60 to 70	204	51.0	127	31.7
50 to 60	41	10.2	12	3.0
40 to 50	4	1.0	0	0.0
Over 70	111	37.7	261	65.2
Under 70	249	62.3	139	34.8
Average age		66.3		72.1

The average age of the prostatectomy patients was 66.3, while that of the resection patients was 72.1 years. The average age of the last 200 resection patients was something over 73 years. Only 27.7 per cent of the prostatectomy patients were over 70 years of age, while 65 per cent of the resection patients were over 70. Ten per cent of the prostatectomy patients were between 50 and 60, while only 3 per cent of the resection patients were in that age group. This means that resections were being done in many cases in which I formerly would not have had the courage to do a prostatectomy, and looking at the group as a whole I believe that I can say with more conviction than I did a year ago that at least 20 per cent of the resection cases were such bad risks that I never would have attempted a prostatectomy.

HOSPITALIZATION

Approximately 90 per cent of the prostatectomies were done by the two-step method. It was the routine procedure to require at least ten days of indwelling urethral catheter drainage previous to cystostomy and in only three of the cases was that not observed. The average preoperative hospital days for the prostatectomies was forty-three and the total average hospital days for the 400 prostatectomy patients was seventy-one days. It was customary also to send the patient home following the cystostomy for a period varying from three weeks to several months. The average interval between the two operations was seventy-seven days. I mention these facts to show that the importance of preoperative treatment was not minimized and the apparently high mortality rate certainly cannot be explained on the basis of lack of preoperative treatment

or the care with which that was carried out. The average preoperative treatment for the 400 resection cases has been eight and one-half days and the average postoperative hospitalization time has been nine days, making a total of seventeen and one-half days as against seventy-one days for the prostatectomy cases or a saving of over fifty days per patient. When it is realized that it costs approximately \$5 for each hospital day it can be readily estimated what the tremendous saving has been in more than 500 cases. It means a saving of approximately \$250 per patient. Multiply that by 500 and the sum is not small. The decrease in the amount of gauze and cotton used in the service since resection was taken up amounts to about \$7,200 a year. The saving in Pezzer catheters alone in one year was nearly \$600. In general it can be said that a bed that previously cared for one prostate patient is now caring for four. These are items that are of tremendous importance in the care of the sick, particularly during times like these.

There is also great saving in the nursing care and it would be very difficult to estimate that in dollars and cents. It is the exceptional private patient now who needs a private nurse and it was the rule to have two private nurses on each private prostatectomy patient for at least six days. It is not uncommon for a private patient to have a total hospital bill of \$100 or slightly less including the cost of his preoperative and postoperative roentgenograms and \$25 for the use of the operating room.

HEMORRHAGE

What I said about hemorrhage in resection a year ago still holds. I feel convinced that any uncontrollable hemorrhage at the time of operation is the fault of the operator and not the method. The amount of blood lost during the operation should be and is insignificant. I will not deny that there will be now and then a very rare case in which one will have a hemorrhage at operation that one cannot control and it may be necessary to open the bladder. That is true of any surgical procedure. In this resection work no such case, fortunately has occurred. No bladder has been opened to control hemorrhage and no bag or other device has been used in any case for the control of hemorrhage. The hemorrhage during the first week or so following resection should also be and is insignificant and easily under control. The loss of blood during these two periods in resection is only a small fraction of what it is in prostatectomy. In no one of these 400 resection cases has hemorrhage had anything to do with a death or with the course of the patient.

Late hemorrhage frequently occurs in resection. The vast majority of these patients have been heard from a month after they have gone home and fully 70 per cent of them have reported some terminal hematuria during the third, fourth and fifth weeks. In only eight cases has this hematuria been of any magnitude. Seven of these eight patients have returned to the hospital. The one who did not return had a hemorrhage that lasted twenty-four hours. Three of the seven who returned had stopped bleeding by the time they got to the hospital. Of the other three, one had no further hemorrhage after the clots were washed out of the bladder. Of the other two in one—and this was the most severe that I have ever had and was the only one in whom the hemorrhage was great enough to increase the pulse rate—the hemorrhage was coming from a spurter in the anterior cleft between the two lateral lobes and no cuts had been made in this area and the

patient gave a history of having had gross hematuria previous to resection. In the last case the hemorrhage was coming from an area from which apparently a slough had just been released and was easily controlled by fulguration. In the prostatectomy cases there were seven late hemorrhages, in two this hemorrhage was the all important factor in the deaths of the patients and in several of the prostatectomies I am quite positive that the loss of blood during the first few days was at least an important contributing factor in their demise.

The cause of the late bleeding in resection has been attributed to the sloughing of the tissue. Undoubtedly in some cases this is true, but I believe that more of the hemorrhages come from the granulation tissue that is formed over the area of resection. I have had an opportunity to use the cystoscope in several cases in which there had been bleeding and in many of them there was no evidence of any slough.

Since September, 1931, no cystostomies have been done in resection cases as a step in the preoperative treatment. Two cystostomies, however, have been done in order to control bleeding that the patient had when he was admitted to the hospital. In one of these cases it seemed necessary to do a prostatectomy in order to control the most violent hemorrhage that I have ever seen in such a case. In the other case a resection was later done. Several patients have been admitted and resections performed on whom cystostomies had been done elsewhere previous to admission to the University Hospital. Two other patients who came in with rather violent preoperative hemorrhage had their hemorrhage completely and immediately controlled by immediate resection.

INFECTION

Infection, I believe, is the most serious, the most troublesome, and probably the most common complication following resection and is at the present time our biggest problem. The explanation, it seems to me, is to be found in the necrosis that follows in the wake of the resection. It is true that the film of coagulated tissue is very thin, but the depth of the necrosis extends far beyond the zone of coagulation. This necrosis in part is probably due to the heat produced in the tissue, as has been shown by Caulk, but I am quite sure that thrombosis also plays a very important role. The extent of this necrosis varies greatly in different patients and is entirely absent in many of them. It furnishes a fertile field in the presence of urine for infection and I believe, is the explanation of it. This infection with sepsis and uremia has been by far the most common cause of death in our series of resection, but even though it has been the most common cause it has not killed as many patients as infection did in the 400 cases of prostatectomy.

Encrusted cystitis occurred in three of the early cases in which resection was done. One cleared up by itself and the other two cleared after the encrusted areas had been cut away with the resectoscope. The same condition was noted in two of the prostatectomy cases.

Frequency of urination following resection is one of the most troublesome things about the entire procedure and as I see it there is really nothing in prostatectomy with which to compare it. In practically all the cases of resection there is a fairly well marked frequency immediately after the indwelling catheter has been removed. The rule is that as the days go by this frequency decreases but in a fair percentage of the earlier cases it was quite persistent and in a few of them

seemed to be almost permanent. The occurrence of this persistent symptom decreased as our experience grew and it is no longer a troublesome manifestation. Several of the early patients in whom it was manifest have been relieved by a second resection. In one case in which the frequency amounted to a nocturia of from eight to twelve times for a period of four months it was immediately and completely relieved by the removal of a piece of tissue that had been left in the bladder at the time of resection.

I do not mean to minimize the importance of this complication but I do believe that as resections are done better it will be found that the symptom does not occur. While it is troublesome it is not serious.

RESIDUAL URINE

Practically all the resection cases have shown varying amounts of residual urine immediately following the removal of the indwelling catheter. As a rule, this rapidly decreases in amount as the days go by, and if it does not disappear it is an indication for a second

TABLE 2—Mortality

	Prostatectomies		Resections	
	Number	Per Cent	Number	Per Cent
Total	97	24.2	26	6.5
Benign	82	21.9	18	5.5
Carcinomas	15	60.0	8	10.0
Cystostomy	67			
Prostatectomies	30	9.0		
Average age		68		74.3
80 to 90 years	6	40.0	3	12.0
70 to 80 years	46	34.0	17	7.2
60 to 70 years	38	18.6	6	4.8
50 to 60 years	7	17.0	0	0.0
1st 50	13	26.0	11	22.0
2d 50	6	12.0	4	8.0
3d 50	12	24.0	3	6.0
4th 50	10	20.0	1	2.0
5th 50	12	24.0	6	12.0
6th 50	16	32.0	0	0.0
7th 50	13	26.0	1	2.0
8th 50	15	30.0	0	0.0
Last 300	78	26.0	11	3.6
Last 200	56	28.0	7	3.5
Last 100	28	28.0	1	1.0

resection unless the cysto-urethrogram shows a complete absence of obstruction. I do not consider the presence of residual urine in the first week or ten days as anything at all serious.

This cannot be compared with anything in prostatectomy for the simple reason that during the corresponding period following the surgical removal of the gland there is always bladder drainage. I have no idea that if a prostatectomy patient had no means of getting rid of the urine except through the urethra he would have considerable residual urine if not retention, during the first two weeks following prostatectomy.

EPIDIDYMITIS

There has been no difference in the occurrence of epididymitis in resection and in prostatectomy and I believe that it is wise to do vasectomies as a routine, although I do not always do it.

MORTALITY

The virtues of different surgical procedures on the prostate have been largely determined on the basis of mortality rate. I do not believe that this is entirely sound but it is the custom just the same. In the 400 prostatectomies ninety-seven deaths occurred and in a

mortality rate of 24.2 per cent. Of these ninety-seven deaths it is important to note that sixty-seven, or 70 per cent, occurred between the first and second operation. Thirty of the deaths followed prostatectomy. If the sixty-seven cystostomy deaths were not counted in the mortality the rate would drop from 24 per cent to 9 per cent. If the fifteen carcinoma deaths also are eliminated, the mortality rate would be less than 5 per cent. This illustrates how easy it is to change the rate by different methods of estimation. On the other hand, in the 400 resection cases there were twenty-six deaths, giving a total mortality of 6.5 per cent. Of these twenty-six deaths, fifteen occurred in the first 100 cases, leaving eleven in the last 300, and during the last 275 resections there have been two deaths with a mortality rate of less than 1 per cent. A careful review of the table of deaths shows a consistent decrease in the mortality rate for resection, while that in prostatectomy has been constant. A mortality rate of less than 1 per cent is entirely too good to be true and if I can keep the death rate below 5 per cent in the patients that I am compelled to handle I will be perfectly satisfied.

105 East Iowa Avenue

TRANSURETHRAL PROSTATIC RESECTION

CLINICAL CONSIDERATION, WITH ANALYSIS AND STUDIES OF RESULTS

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We have aspired to follow intelligently the progress of perurethral prostatic surgery. With no original technic to champion, and having distaste for clinical experimentation, we have sought to apply the various procedures with an open minded caution becoming to beginners. With others, we await a comprehensive analysis of results obtainable by resectoscopy, the ultimate fate of which must be founded on broad clinical experience rather than on the views of a few protagonists of one method or another. It would seem desirable to describe for the guidance of beginners some heavy weather that may be encountered, even by the cautious navigator, on the seas of prostatic resection. We venture, for these reasons, to present an analysis of our limited personal experience.

TECHNIC

In scientific surgery, mechanics should be the means to an end and not as we fear is sometimes true of resectoscopy, the end itself. This suspicion naturally arises when, as now seems to be the fashion, the criterion of success is held to be routine application of the method. As it is a difficult craft, differences in results are to be expected, and one should not question, therefore, claims of extraordinary success with methods which we have used and found wanting. It is a delightful inevitability that the technic warmly advocated by one may fail in the hands of another.

Experience with more than 100 operations for bar prostatism by the original Wappler-Collings technic taught us the destructive limitations of that method and

the need for a more effective electrosurgical means of excising obstructive prostatic tissue. Familiarity with the foregoing technic explains too our preference for the Stern-McCarthy resectoscope, with which all of the operations in this series have been performed. We prefer the larger instrument (size 28 F). This is said to be more productive of traumatic bleeding but this has not been true in our experience. Traumatic hemorrhage especially that coming from the roof of the urethra may be most annoying but is rarely serious. In one case, profuse instrumental bleeding coming from the floor of the urethra deeply placed between large lateral lobes was controlled with difficulty and only after the overhanging tissue had been excised. In similar cases the beginner would do well to defer operation. Difficulty was encountered in distending the bladder, owing to leakage around the tube in two of eight cases in which preliminary cystostomy was employed.

In two instances, incisional hemorrhage proved quite difficult to control, but in neither case was the operation discontinued. On the whole the technical difficulties have been negligible, which is attributable perhaps to adequate experience with other perurethral operations for prostatism and to the fact that the technic of revision was acquired, as it should be, in operations on small obstructions.

We employ both types of generators and while we incline to the view that their successful use is dependent more on the operator's familiarity with the apparatus than on the physical principles involved, there are essential differences in the currents. The steady, undamped oscillations of the vacuum tube generator provide an ideal current for cutting purposes, so far as current penetration and cleanliness of the incision are concerned. However, it is highly advantageous to have insignificant primary bleeding, especially when operating on large obstructions, and this is best accomplished, we find, by means of the spark gap machine. This advantage depends on deeper current penetration, and while we have had no complications in our own work attributable to deep electrocoagulation, there are the potential dangers of sloughing and stricture formation, both of which complications have been experienced by others. We have under our care at the present time a case of extensive stricturing of the prostatic urethra which followed resection performed by an expert some fourteen months ago.

In our series there have been instances of secondary hemorrhage, one of which occurred sixteen days after resection, the others within twenty-four hours. Reapplication of electrocoagulation was necessary in one case the bleeding in the others being controlled by irrigations. A sudden inexplicable rise in systolic blood pressure to 235 explained the bleeding in one case.

At the outset of operations for large tumors, it is essential to work rapidly with a minimum of bleeding; this is best accomplished with the spark gap generator. It is often desirable, especially when nearing the completion of an operation, to work slowly, accurately and with a minimum of current penetration, which is best accomplished with the vacuum tube machine.

CURATIVE RESECTOSCOPY

Resectoscopy is spoken of as curative when applied with apparent success in cases of the type hitherto subjected to prostatectomy. The term is thus employed with the reservation that the permanence of the mechanical restoration is conjectural.

Since Dec 1, 1931, 140 patients with urinary obstruction due to benign hyperplasia of the prostate gland have been operated on in our clinic, and of these 80 (57 per cent) have had resections. As our experience grows, the proportion of cases subjected to resectoscopy increases, at the present time the method is employed in approximately 65 per cent of our cases. This is attributable largely to greater mechanical aptitude, but better judgment in the selection and preparation of cases likewise plays a part.

In discussing the selection of material, it is essential to consider not only the type of obstruction and the relative skill of the operator but also that which is of equal importance, namely, the classification of cases on the basis of local and general complications, which influence, often profoundly, the outcome of whatever operation is employed. The clinical data given in table 1 show that, while the largest tumors were excluded,

TABLE 1—Clinical Data

Age Incidence		Residual Urine	
Under 40	7	None	3
40 to 49	9	Acute retention	17
50 to 59	20	300 to 500 cc	11
60 to 69	28	500 to 1 500 cc	7
70 to 79	14	Average	220 cc
80 to 90	2		
Predominant Symptom		Size of Prostate on Rectal Examination	
Acute retention	17	Normal	3
Frequency and urgency	9	Grade 1	35
Difficulty	40	Grade 2	27
Hematuria	7	Grade 3	15
Pain	2		
Average Duration of Symptoms		Cystoscopic Classification	
3 ^o 6 months		Commissure and lateral lobes	33
		Commissure chiefly	30
		Middle and lateral lobes	7
		Large middle lobe	4
		Lateral lobes	1
Preoperative Complications			
Local		General	
Hematuria	Psychasthenia		2
Epididymitis	Insanity		1
Urinary infection	Arthritis		4
Acute pyelitis	Severe cardiovascular lesions		10
Prostatic abscess	Diabetes		3
Calculus (vesical)	Cataract		1
Calculus (ureteral)	Horshoe kidney		1
Hydrocele	Uremia		2
Neoplasm	Hemiplegia		1
	Alcoholism		3
	Syphilis		1
	Tuberculosis and other pulmonary lesions		1
	Pernicious anemia		1

advanced prostatism and serious complications were not uncommon.

Considering first the mechanical problems dependent on the size, shape and location of the obstructive mass, we find that the difficulties and, to a lesser degree, the dangers of resection increase in almost direct ratio with the vertical diameter of the tumor. In more than 40 per cent of cases this is approximately that of the distance traversed by a full excursion of the electrode. These are ideal from the mechanical standpoint for resection, the difficulties of which are usually encountered when multiple cuts in the same horizontal plane are necessary. The degree of prostatism bears no fixed relationship of course to the size of the obstructive mass, but the majority of cases presenting the ideal physical conditions for resection are relatively early in prostatism and not often seriously complicated. Thus in thirty-two of forty-two noncomplicated cases in this series no preoperative treatment was thought necessary and with few exceptions recovery was rapid and

uncomplicated. With this group there has been little or no operative difficulty. In one instance, extraperitoneal extravasation of urine occurred two weeks after operation and after one week of normal voiding. We have ascribed the complication to operative injury, although rough catheterization is an equally rational explanation. This patient recovered after a prolonged convalescence.

It is our belief that, in the treatment of uncomplicated reasonably early prostatism dependent on small and moderate sized obstructions, resectoscopy should, and doubtless will, replace prostatectomy.

Again considering the problem of resection in the case of large tumors from the technical standpoint, we admit the mechanical possibility in the great majority of cases. In uncomplicated cases of this type, resection can be done by the skilful operator with mechanical success and possibly no greater primary mortality than follows prostatectomy in similar cases. To suppose that the inexperienced resectionist could accomplish the same results is ridiculous, and it is to be regretted that the dangers and difficulties of resectoscopy have been understated, thus leading the credulous to pay the price of an appalling mortality and morbidity.

An important group comprises advanced, complicated cases, and especially those in which the tumors are very large. In approximately 10 per cent we find resection either impossible for mechanical reasons or inapplicable owing to bladder complications demanding open surgery. In an additional 20 per cent, our experience does not justify the adoption of resection, which is attended by poor results attributable in part to mechanical failure but more often to complications, fatal or otherwise, representing largely the price paid for mechanical success.

Special interest attaches to eight cases in the series in which drainage by cystotomy was provided. In the majority of these cases, two-stage prostatectomy was anticipated, but restudy disclosed enough shrinkage of the tumor to justify resection, or the latter was selected as the least traumatic procedure. In a number of cases not included here, carcinoma obscured by edema and congestion became evident after dehydration through drainage, and in two instances study of the excised tissue revealed unsuspected carcinoma.

Restudy should be done as a routine after drainage even in cases which at the outset presented impassable obstructions or in which examination through the open bladder disclosed large intravesical masses. In a surprising number of such cases, resection will prove to be the method of choice.

In considering complicated prostatism from the prognostic standpoint, one cannot divorce the influence of technical difficulties encountered at operation, but the direct consequences of preoperative complications are shown in thirty-three cases, in few of which were the resections difficult or prolonged. The average total hospitalization for this group was 36 days, as contrasted with 11.7 days, of which 5.8 days comprised the average postoperative period for noncomplicated cases. In the majority of complicated cases long hospitalization was due to prolonged preoperative treatment. The possible consequence of complications is illustrated in the three deaths in the series, all of which occurred in serious risks. The obstruction in one of these cases was moderate in size, in the others quite large. The question arises in this connection whether a reasonable choice can be made between enucleation and resectos-

copy on the basis of their relative dangers in super-serious risks. Our personal experience in the matter, while conflicting, leads us nevertheless to the conclusion that generalizations in this regard are valueless. Two of the three deaths occurred in cases in which enucleation was considered desirable but too hazardous. Both of these patients had large tumors with complete retention, both had preliminary suprapubic drainage, one for a period of three months prior to resection. The latter patient died of cerebral hemorrhage ten hours after operation, while the other, who survived delirium tremens following cystolithotomy, developed fatal pneumonia five days after resection. The autopsy in this case disclosed some perivesical hemorrhage which we attributed to excessive cutting in the region of the anterior commissure.

We cannot escape in retrospect the thought that one or possibly both of these patients might have survived enucleation which is less traumatic in cases of this type than necessarily prolonged resection.

Conflicting evidence is found in the results obtained in other cases of a somewhat dissimilar type so far as the type of obstruction is concerned. An illustrative case is that of a Negro admitted to the wards with a comparatively small but impassible obstruction and uremia. The blood creatinine content was 12.5 mg. This patient not only survived cystotomy but had a successful resection and remains mechanically well eight months after operation. Incidentally, the minimum creatinine has been 4.5 mg.

The third death, which occurred on the sixteenth postoperative day after easy resection of a moderate-sized obstruction, was due to rekindling of a joint infection and empyema of the gallbladder.

TABLE 2—Operative Data

Preoperative Treatment			
None	32	Bladder lavage	4
Catheter drainage	17	Internal medication	15
Cystotomy	6	Vasectomy	2
Cystolithotomy	2	Epididymectomy	2
Average duration of catheter drainage 11 days			
Average duration of suprapubic drainage 35.5 days			
Anesthesia			
With few exceptions (sacral or local) spinal anesthesia used (procaine hydrochloride 50-150 mg.)			
Average time of operation 33.5 minutes			
Difficulties Encountered			
None	73	Difficult to control bleeding	2
Profuse traumatic bleeding	1	Difficult instrumentation	2
Difficult to distend bladder	2		
Local Postoperative Treatment			
Drainage		Duration of Drainage	
None	2	0 to 2 days	20
By catheter	72	3 days	24
By suprapubic tube	6	4 days	19
		5 to 10 days	11
		10 days or more	6
Reasons for Prolonged Drainage			
Acute pyelonephritis	3	Rupture of bladder	1
Postoperative hemorrhage	1	To promote healing of sinus	2
Difficult voiding	1		

Experiences like the foregoing preclude generalizations regarding the relative dangers of resection and prostatectomy in super-serious risks, but it is our opinion that there is nothing to be gained by resection in the case of the individual with a large easily enucleable tumor who has survived cystotomy.

It is of interest that most of the postoperative complications and practically all of the serious ones occurred in patients who presented preoperative complications and that these rather than mechanical problems have given the greatest concern.

TABLE 3—Postoperative Data

Primary Mortality			
3.7 per cent (three deaths described in text)			
Average Total Hospitalization			
42 noncomplicated cases 11.7 days			
Average Postoperative Hospitalization			
42 noncomplicated cases 5.8 days			
Average Total Hospitalization			
23 complicated cases 26.3 days			
Complications (Post-operative)			
		Local	General
Rupture of bladder	1	Retention	0
Cystitis (severe)	2	Repeated operation	2
Urethral stricture	5	Hemorrhage	3
Indolent sinus	2		
		General	
Pyelonephritis	5	Pneumonia	1
Urethritis	1	Temperature rise	8
Impaction of gallbladder	1	Chills and fever	2
Angina pectoris	1	Herpes zoster	1
Delirium tremens	1	Carbuncle	1
Cardiac disease	2	Active pulmonary tuberculosis	1
Uremia	2		
Reoperations (6)			
1 Volvulus 1 month after resection died after operation autopsy disclosed large epithelial lined tunnel through prostate			
2 Reoperation for complete retention 30 pieces of tissue removed perfect recovery after second revision			
3 Reoperation for frequency, urgency and 260 cc retention 7 pieces of tissue removed complete recovery			
4 Hemorrhage 16 days after revision controlled by catheter			
5 Hemorrhage from trigon biopsy specimen inflammatory ulcer			
6 Eczematous anemia and hemiplegia 8 months after operation died			
Final Results in 75 Patients Living			
		Mechanical	Symptomatic
		All good or perfect	Burning on urination 1
			Frequency marked 2
Average Duration of Urethral Convalescence (6 weeks)			
Note—In cases complicated by chronic prostatitis prolonged postoperative treatment is necessary			

The final results in the series have been satisfactory. All of the seventy-five living patients are mechanically well. From the symptomatic standpoint, there are sixteen who are not entirely well, thirteen of these complain of some burning on urination and three of frequency, the latter in two instances being attributable to polyuria incident to nephritis. The average duration of the urethral convalescence has been about eight weeks. There have been six readmissions for reasons given in table 3.

PALLIATIVE RESECTOSCOPY

Palliative resectoscopy implies, in the case of benign prostatic hyperplasia, an attempt to overcome urinary obstruction partially in cases in which the completed operation seems inapplicable. This presupposes hazardous conditions necessitating a minimum of trauma. Under such circumstances, palliative resectoscopy may be performed, perhaps in multiple stages, small amounts of tissue being removed at each sitting and a total amount sufficient to restore reasonably satisfactory voiding. The applicability of this depends largely on the successful use of local anesthesia, with which extensive resections are possible, as illustrated in the case

of an individual with a systolic blood pressure of 250 from whom we removed thirty large segments of tissue painlessly after infiltration of the area with procaine hydrochloride solution (2 per cent) colored with indigo carmine

Preliminary dehydration of the obstructive mass by diathermy is a phase of the problem that has future possibilities in the treatment by partial resection of large obstructions in serious risks

Palliative resectoscopy has proved the first completely satisfactory method of overcoming prostatism due to carcinoma. If dedicated to this alone, the procedure would be a monumental contribution to urologic surgery. There is no evidence to indicate that the operation hastens local growth of the neoplasm or promotes its dissemination. Restudy of the excised tissue revealed carcinoma in one instance, thus explaining a malignant condition of the spine, which appeared ten months after operation. The complete absence of local evidence of the disease in this case seems remarkable.

Resectoscopy followed by high voltage roentgen therapy is the most satisfactory means of promoting the comfort if not prolonging the life of the individual with an inoperable, obstructive carcinoma of the prostate gland.

We have resected neoplasms of the deep urethra together with obstructive prostatic tissue in three cases: two papillary carcinomas, the other a squamous cell tumor. The ease and completeness of the procedure contrasts strongly with the unsatisfactory methods hitherto available.

Mention may be made of the applicability in the palliative sense of resectoscopy in chronic prostatitis associated with and possibly maintained by minor obstructions at the bladder outlet. Removal of the obstruction, whether fibrous or glandular, does not cure the prostatitis but frequently makes theretofore incurable infections curable by ordinary measures.

PROPHYLACTIC RESECTOSCOPY

Prophylactic resectoscopy refers to the excision of incipient prostatic obstructions with the hope of arresting the hyperplastic tendencies in the remaining tissue, thereby removing the future possibility of advancing prostatism. It implies, too, in the event of failure to accomplish this, the arrest, at least for a time, of the clinical and anatomicophysiological manifestations of prostatism. The progress of the latter can be arrested for an indefinite period by the early restoration of urinary freedom but the duration of the mechanical correction remains to be determined. As radical prostatectomists we have been accustomed to deal for the most part with the end results of a morbid process the stimulus to which has largely if not completely expended itself. We now propose through partial resection to arrest a tendency which is widespread in the prostatic tissues of certain individuals and at a time when the power of growth is at its maximum. Our series contains three instances of recurrent obstruction, two of which followed electrosurgical excision (Collings method), the other, excision by the Caulk method of glandular bars. On the whole however our experience is well as that of others with former methods used in the treatment of glandular bar prostatism indicates surprisingly little tendency to early recurrence and the same will prove true in all probability of resectoscopy in similar cases. Nevertheless while we are fully justified in advising early resection, the circumstances obligate us to a conservative attitude.

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INDIVIDUALIZING THE PROSTATIC PATIENT IN SELECTION OF TREATMENT

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AND

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There is probably no one who will disagree that the development and perfection of transurethral resection of the prostate have made available a valuable method for the treatment of prostatic obstruction. The value of prostatectomy has long been recognized, so long in fact that some have forgotten that it too has its shortcomings. However, prostatectomy has already been through the mill of controversy that resection is now passing through and our experience convinces us that both will survive. Thus there now are two successful methods of handling the prostatic patient so that each case must be carefully studied and individualized and the treatment selected that assures the patient relief in the simplest, safest way. We decry the popular belief that resection is the simplest in all cases but our experience justifies the statement that it is a more conservative operation and has a larger factor of safety than prostatectomy. With these considerations in mind, how shall one approach the prostatic patient?

Our conclusions as to the value of transurethral resection are based on a series of 198 operations on 194 patients. All types of prostatic enlargement have been included during the course of our experience with the method and all cases have been carefully followed. By personal visit or correspondence we know the present status of all but fourteen of the cases in this group and have kept a check on the subjective state, the amount of residual urine, and the general condition of the patient. We feel very strongly that the immediate postoperative result is only one item in evaluation of the procedure, for continued observation of a patient may alter one's conclusions, favorably or unfavorably but in either event one should by all means know the story subsequent to operation.

It is almost literally true that no two cases of prostatic obstruction are alike. There is wide variation in the age and general condition of the patient which classifies him as a good or a bad surgical risk, the history and duration of symptoms differ, the presence of associated conditions in the urinary tract such as infection, stone and atonic bladder must be considered, and the type of gland is one of the most important considerations. When one considers all these factors it immediately becomes apparent that each case is an individual problem and that treatment must be selected accordingly. They may, however, be divided into certain groups.

All cases of prostatic obstruction may first be divided into two classes, according to whether the lesion is malignant or benign. Every patient with a malignant condition of the prostate consulted us because of obstructive symptoms and in all cases diagnosed clinically as carcinoma of the prostate we recommended transurethral resection followed by implantation of radium or high voltage roentgen therapy or both. There have been thirty-four cases of this type in this series with but one death from operation. All the

From the Cleveland Clinic
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patients have been relieved of their distressing urinary symptoms and are entirely comfortable, except one with marked local reaction from radium implantation which cannot properly be attributed to the resection. In view of the fact that we have been doing transurethral resections extensively for only about three years, we cannot yet quote significant statistics as to length of life except to say that twenty-one patients are known to be living and comfortable at this time. In one case we have had to do a second resection for recurrent growth causing obstruction. This patient is still alive and in good condition one and a half years after his original operation. The data for this group are presented in table 1.

The cases of benign hypertrophy must be further subdivided and may be placed first into two large groups: (1) the bad risk patients and (2) the good risks. The first group includes the patients tottering with senility, those having severe myocardial damage or angina pectoris, those with severe diabetes, those

TABLE 1—*Transurethral Prostatic Resection in Carcinoma*

Verified by pathologic examination	26
Clinical diagnosis (histologically benign)	8
Total (17 per cent of total cases)	34
Results	
Obstructive symptoms completely relieved	34
Operative deaths	1
Living	21
From 2 to 3 years	3
From 1 to 2 years	6
Less than 1 year	12
Dead since operation	0
Not traced	3

with kidney damage that does not improve on pre-operative drainage, and a few patients whose charts show nothing of significance but who, after careful inspection and experience, are considered poor surgical risks. The very obese patient often falls into this category. Regardless of all other factors, we have chosen to handle these by transurethral resection. In this series there have been twenty-eight cases so classified (table 2). Two operative deaths have occurred in this group, one from a fatal attack of angina on the seventh postoperative day and the other in a patient aged 79, with severe kidney damage who developed an oliguria, could not stand the shock of a moderate postoperative hemorrhage, and died in uremia on the second postoperative day.

TABLE 2—*Transurethral Prostatic Resection in Bad Risk Cases*

Age 60 to 69	7 cases
70 to 79	13 cases
80 to 89	8 cases
Operative deaths	2
Complete relief	12
Partial relief	10
No relief	4

Of the remaining patients, twenty-two were restored to urinary comfort and although in several instances they continue to carry some residual urine, this does not give rise to trouble, and the patients consider themselves well. When it is recalled that in all these cases there had been complete retention of urine, we are content to have made a bad situation better and to have a living patient.

Each of the four patients who did not receive relief from the resection had large extravescical lateral lobes, a type that we include now among those cases unsuitable for resection.

We classify the patient as a good surgical risk when we are able to select treatment unhampered by any consideration except the permanent and complete relief of his urinary obstruction. In this group of cases the chief variable is the type of gland and so we may quite properly concern ourselves with which types are suited

TABLE 3—*Transurethral Prostatic Resection in Good Risk Cases*

Group	Type of Gland	No. of Cases	Per Cent	Result		
				Complete Relief	Partial Relief	No Relief
2	Simple bilateral lobe	4	3.0	2	1	1
1	Solitary posterior commissural	15	11.3	15		
1	Solitary subcervical	3	2.2	3		
	Bilateral and posterior commissural					
2	Predominantly bilateral	18	17.6	3	8	
1	Predominantly postcommissural	50	34.8	46	4	
3	Striking difference not noted	20	15.0	13	6	1
	Bilateral and subcervical					
2	Predominantly bilateral	2	1.5		2	
1	Predominantly subcervical	4	3.0	4		
1	Anterior lobe	1	0.7	1		
1	Previous prostatectomy	2	1.5	2		
1	Unilateral right lobe	1	0.7	1		
1	Sclerotic median bar	12	9.0	9	3	
Totals	Group 1	68		61	7	
	Group 2	24		5	11	8
	Group 3	20		13	6	1
		132	99.3	99	24	9
				75.0%	18.3%	6.7%

* Partial relief: patients who still carry significant quantity of residual urine or continue to have any obstructive symptoms.

for transurethral resection and which for prostatectomy. A summary of the results in 132 cases of this type is shown in table 3.

Careful routine cystoscopy with the cystourethroscope is essential in the selection of cases. This should include careful inspection of the bladder and trigon, the bladder neck and the posterior urethra. The position and depth of the clefts in the bladder neck are important considerations, the degree to which the trigon

TABLE 4—*Classification of Cases of Prostatic Hypertrophy, According to Randall*

1	Simple bilateral lobe hypertrophy
2	Solitary posterior commissural hypertrophy
3	Solitary subcervical lobe hypertrophy
4	Combined postcommissural and bilateral lobe hypertrophy. Here from the point of view of suitability for transurethral resection we have subdivided this group into:
	(a) Predominantly postcommissural
	(b) Predominantly bilateral lobes
	(c) No striking difference
5	Combined subcervical and bilateral lobe
	(a) Predominantly subcervical
	(b) Predominantly bilateral lobe
6	Bilateral subcervical and commissural hypertrophy
7	Anterior lobe hypertrophy
8	Sclerotic median bar
9	Carcinoma

is obscured is another, and the third and possibly the most important is an estimation of the length of the prostatic urethra, which gives an index as to the size of the lateral lobes. It is, of course, understood that digital examination of the prostate through the rectum with and without the cystoscope in the urethra is indicated in all cases.

We have chosen to group our cases according to Randall's classification, which includes the types given in table 4.

With all these facts in mind, one may consider the cases in the following categories:

1 Those ideally suited for transurethral resection with an assured successful outcome.

2 Those not suited for resection in which prostatectomy should be advised

3 A small group of borderline cases in which resection may first be done and, if unsuccessful, may be followed by prostatectomy. In this type of case we have found no resultant ill effects from doing the resection and the prostatectomy at the same hospital admission.

In classifying cases according to suitability for transurethral resection, the criteria given in table 5 are considered. These criteria result in the classification of types suitable and unsuitable for the operation shown in table 6.

The third group in which transurethral resection is tried before resorting to prostatectomy is less well defined, though it is apparent that it falls between the

TABLE 5—Criteria for Transurethral Prostatic Resection

Suitable	Unsuitable
1 Moderate enlargement by rectum	1 Pronounced enlargement (not necessarily unsuitable)
2 Cystoscopically	2 Cystoscopically
(a) Middle lobe small to moderate size	(a) Middle lobe very large
(b) Absence of pronounced intravesical extension of lateral lobes	(b) Marked intravesical lateral lobes
(c) Absence of inverted V shaped cleft at 12 o'clock position	(c) Deep inverted V shaped cleft at 12 o'clock position
(d) Moderate to slight intraurethral lateral lobe encroachment	(d) Marked intraurethral lateral lobes
(e) Absence of lengthened prostatic urethra	(e) Decidedly lengthened prostatic urethra

two extremes represented by the other two groups. This group is extant only because of the variability in size of the glands, especially the lateral lobes, and includes the cases in which the indications and criteria are less well defined. We are inclined in all such cases to do transurethral resection first and, if the result is not satisfactory, to follow with prostatectomy. In fairness it should be stated that many of our best

TABLE 6—Types for Transurethral Prostatic Resection

Suitable	Unsuitable
1 Solitary commissural hypertrophy	1 Simple bilateral lobe hypertrophy
2 Solitary subcervical hypertrophy (excepting those rare ones which attain immense size)	2 The ponderous subcervical lobe or postcommissural hypertrophies
3 Posterior commissural and bilateral lobe hypertrophy with predominance of former that is without marked intraurethral encroachment of the lateral lobes and marked lengthening of the prostatic urethra	3 Any case presenting marked extravascular lateral lobe enlargement this includes the combined types in which the lateral lobe hypertrophy predominates
4 Subcervical and bilateral lobe hypertrophy in which the same holds true	
5 Anterior lobe hypertrophy	
6 Sclerotic median lobe	
7 Patients having had previous prostatectomy	

results from resection have been in this type of case. There have been twenty cases in this group, with nineteen completely or partially satisfactory results. The single case with no relief occurred very early in our experience and subsequent cystoscopy shows that insufficient tissue had been removed. A second resection has been recommended in this case.

There is another group we should like to mention but for which unfortunately there are no numerical statistics. We refer to those who might be called the neglected prostatic patients. This group includes those

patients who are having definite obstructive symptoms and facing ultimate trouble but have the unfortunate belief that this is just one of the necessary accompaniments of advancing years. When prostatectomy was the only method of relief, the personal physician and even the urologist postponed operation in these cases until relief became imperative. Now armed with a distinctly less formidable and more conservative procedure, these patients should all have early treatment, as it is probably safe to say that they would all be suitable

TABLE 7—Summary of Results in Transurethral Prostatic Resection

		Operative Deaths	
		Number	Per Cent
Carcinoma	34	1	3
Bad risk	28	2	8
Good risk	132	0	0
	194	3	1.5

for resection. Convinced as we are of the efficacy of transurethral resection, a campaign of this sort would still further reduce the number of patients who at the present time require prostatectomy for relief.

A summary of the immediate mortality in 194 cases of transurethral prostatic resection is shown in table 7.

ABSTRACT OF DISCUSSION

ON PAPERS OF DR. ALCOCK, DR. HERMAN AND GREENE, AND DR. ENGEL AND LOWER

DR. HERMON C. BUMPUS, Rochester, Minn. These three papers adequately emphasize the salient features of transurethral resection of the prostate gland, one of which, referred to by Dr. Alcock, I wish to enlarge on, namely, the control of infection both before and after operation. Because patients with highly infected urine and impaired renal function usually improve under preliminary drainage by either urethral catheter or suprapubic cystostomy, the idea has been general that such preliminary drainage is imperative prior to any operation on the prostate gland. So firmly has this dictum become established that many surgeons refuse to operate unless preliminary treatment in the form of urinary drainage has been carried out for an arbitrary period ten days often being considered the minimum. In the absence of urinary or prostatic infection, such a period of drainage carried out by means of an indwelling catheter is bound to result in infection and what before was a mild inflammation of the prostate gland causing no reaction is activated to virulence often alarming, and the patient becomes a poorer instead of an improved surgical risk. For this reason, during 1932, my associates and I performed transurethral resection on 45 per cent of the 276 patients operated on without any preliminary preparation and could not detect that their postoperative course was essentially different from that of the patients who had previously had the most painstaking preoperative preparation. Of the remaining patients, 19 per cent were prepared by suprapubic drainage and the others by urethral catheter either indwelling or intermittent. There were no deaths in the series. The low mortality rate can be attributed largely to our extreme care relative to sepsis. The operation is carried out with a knife punch so that coagulation is used only for the control of bleeding and hence is reduced to a minimum and thus a potent source for secondary infection in coagulated and necrotic tissue is largely eliminated. After the operation the indwelling catheter which is kept in place usually not longer than forty-eight hours is connected to a sterile tube running into a sterile bottle. This bottle is not taken to the lavatory and emptied with the inevitable tendency for the distal end of the tube to fall to the floor or be tucked under the mattress or lie on the soiled bedding. Instead the nurse replaces the filled bottle with a sterile one. Disconnection is not permitted from this bottle and the system is kept closed except

when opened for daily lavage of the bladder, which is conducted under the most rigid aseptic conditions

DR A. I. FOLSOM, Dallas, Texas. My experience has been most satisfactory and I am delighted with the results of this procedure. I have operated on 205 patients by the resection method and only three patients by prostatectomy in the past year. One of these was a case in which I made a mistake in diagnosis and went in for carcinoma, intending to put in radium needles, but found an adenoma instead. I do not agree with Drs. Alcock, Engel and Lower that urethral bulgings are not amenable to this type of operation. They are perfectly amenable to it. I have resected 17 Gm of lateral lobe when I had only a small commissure in the middle. I took the tube out on the fourth day and the patient could not urinate at all although he could a little before the operation. I went in the second time and saw two larger lateral lobes than I had the first time. I could explain this by the fact that in the original operation I removed a portion of the capsule and in doing that removed the retaining wall, which allowed more prostatic tissue to be squeezed out into the cavity. As to infection in the analysis of 177 cases the temperature was normal in 46 per cent on the operative day and remained normal throughout that day, it became normal in 29 per cent on the first day, in 50 per cent on the second day and in 83 per cent on the fifth day. 29 per cent of the patients had a temperature of 100 F on the operative day, and only 0.9 per cent had over 100 F on the operative day. In my experience this has been one of the most startling things about the operation. One should have chills and fever after a rather radical transurethral manipulation, yet it has been surprising how few reactions there were. Postoperative hemorrhage has been offered as one reason why this procedure should not be used. One does have hemorrhage in prostatectomies, but in this procedure one has one of the most delightful ways of controlling it that I know of. As Dr. Bumpus said, evacuation of the clots controls the hemorrhages in most instances. If necessary one can open, find the bleeding point, and control it in that way.

DR IRVIN S. KOLL, Chicago. I wish to know the average number of days spontaneous urination occurred following removal of the catheter in Dr. Alcock's cases.

DR HERMAN L. KRETSCHEMER, Chicago. Transurethral resection has supplied a new point of view in the treatment of the patient with prostatic obstruction. The subject at this time is in a state of flux and naturally, there are individual differences of opinion regarding the cases suitable for this form of treatment. There are some who use transurethral resection for all cases, while others use it only in selected cases. Since March, 1932, I have not performed a surgical prostatectomy but have treated all cases of prostatic obstruction with the resectoscope. My experience is based on a series of 250 resections performed on 207 patients. The difference in the number of operations and patients is due to the fact that in 10 per cent it was necessary to do a second resection and most of these were among the early cases. In this series the mortality was 3.9 per cent. I agree with Dr. Alcock that it is not the bleeding that kills the patients but infection. I believe that as time goes on the mortality rate will be reduced because the patients will come in earlier. Part of the relatively high mortality is due to the fact that a certain number of patients are very poor risks—that they are sent in for resection because they cannot possibly stand a surgical operation. As has been brought out in these papers, many of the patients have other serious organic lesions. Thus in my series there were ninety patients who had serious organic disease of the heart. My experience is in accord with that of the men who spoke of the fact that the stay in the hospital is shorter than with prostatectomy. In one group the average postoperative stay in the hospital was 6.7 days. In cases prepared by suprapubic cystostomy the average postoperative stay was fifteen days. Regarding some of the complications. Since doing routine vasectomies I have had no cases of epididymitis. Prior to this I had about 15 per cent. There was only one case of severe primary hemorrhage that demanded a suprapubic cystostomy. There were nine cases of secondary hemorrhage. In seven of them it was only necessary to evacuate the clots and to irrigate with a hot solution of potassium permanganate. In two cases

it was necessary to insert the resectoscope and excise the bleeding point. The postoperative temperature in this series was in agreement with the statements made here.

DR H. W. E. WALTHAM, New Orleans. I want to stress four factors in transurethral prostatic resection to which I have devoted much attention: (1) the minimizing of fever, (2) the prevention of epididymitis, (3) the anticipation of surgical shock and (4) the selection of the anesthetic. For four or five days prior to the resection I give two 0.1 Gm tablets of pyridium by mouth thrice daily and I know that by using this dye I have had less febrile reaction. I cannot understand the tardiness with which many urologists have adopted bilateral vasosection in the preparatory scheme. I have never had epididymitis complicating resections because I have always done preliminary vasosection. Surgical shock must be anticipated even though less of it occurs with resection than with prostatectomy. In men over 65 years of age surgical shock is ever a factor to reckon with. To preclude this possibility I always match and type bloods the morning of resection, and immediately following operation the patient is given 250 cc of whole blood by the direct method. This plan has been followed in all my resections and I have not observed a case of surgical shock since adopting it. I find that spinal, sacral caudal or local anesthesia either relieves the sphincter too much or distorts the working field to such a degree as to impede good work. Therefore nitrous oxide and oxygen inhalation anesthesia is used in the clinic in which I work and I believe it superior to other methods for transurethral prostatic resection.

DR W. J. ENCLY, Cleveland. I suppose there will never be a unanimous opinion as to the applicability of transurethral resection but each urologist will have to work this out in the light of his own experience. Our experience agrees with that of Dr. Bumpus in the matter of the shortened preoperative preparation. Of our cases 38 per cent had only one day of preoperative preparation and 70 per cent had three days or less. In those cases which require suprapubic drainage we often resort to suprapubic puncture instead of doing a cystostomy. We use a trocar with a sharp point which is plunged into the bladder. Then if we wish a No. 18 cysto-urethroscope can be introduced through the sheath and the bladder neck viewed from above. A No. 18 soft rubber catheter is then threaded through the sheath, which is then removed leaving the catheter for drainage. We have not seen any leakage or other complications from handling cases in this manner. Regarding the large bilateral lobe cases which Dr. Folsom considers suitable we feel that prostatectomy is to be preferred to multiple or prolonged resections in the good risk patient. In only three cases have we done more than one resection. In view of the hospital stay, one does not reduce it much in doing multiple resections. Estimated on the basis of resections and prostatectomies done in the past year and a half we believe that about 75 to 80 per cent of cases will be found suitable for resection. Dr. Kretschmer's analysis of complications corresponds rather closely to our own.

DR N. G. ALCOCK, Iowa City. As to the average number of days before spontaneous urination, I may state that I take the catheter out as a routine on the second day. As a rule that is when the patients begin to urinate. If there is any indication for leaving it in longer I replace it. The most striking change that has taken place regarding transurethral resections is the fact that the men who were either radically opposed to it or very doubtful about this procedure a year ago are now doing it.

Localization Theory Must Be Changed.—The classic localization theory with its assumption of a sharp, point to point geometric projection of the body on the cortex with its centers for separate psychic functions must be changed. It was born prematurely. The workers in the years immediately following the discoveries of Hitzig and Fritsch were carried away by enthusiasm. This is the almost inevitable fate of all who share with the privileges the dangers of working in a period of great momentum and as such one certainly can consider the years immediately after 1870 in the field of neurophysiology and neurology.—De Barenne, J. G. *Dusser Arch. Neurol. & Psychiat.* 30:884 (Oct.) 1933.

CHRONIC BILIARY STASIS

TREATMENT BY CHOLEDOCHODUODENOSTOMY AND
GASTRO-ENTEROSTOMYALFRED A. STRAUSS, MD
SIEGFRIED F. STRAUSS, MD
ROBERT A. CRAWFORD, MD
AND
HERMAN A. STRAUSS, MD
CHICAGO

The internist confronted with chronic jaundice in a young patient usually diagnoses it as catarrhal jaundice. If he encounters it in an older patient, he is likely to consider it as due to carcinoma of the head of the pancreas. The surgeon, on exploring, may find no carcinoma at the head of the pancreas and no stones in the common duct. He then usually performs a cholecystectomy, or a cholecystectomy and drainage of the common duct, or he decides that he is dealing with intrahepatic cirrhosis with jaundice and closes the abdomen without further intervention. We believe that in such cases the condition is due to an infection which begins as duodenitis and ascends the pancreatic and common ducts. This triangular infection produces inflammation and hypertrophy of the ampulla of Vater, which in turn give rise to spasm and obstruction of the common duct, biliary stasis and ultimately a breaking down of the liver cells and cirrhosis.

As proof that our contention is correct we present twenty-two cases in all but two of which cures followed when we did away with the obstruction in the common duct and side-tracked the infection by cholechooduodenostomy and gastro-enterostomy. In seven other cases we obtained cures by the following surgical procedures: in four by drainage of the common duct alone, in one by gastric resection and cholecystoduodenostomy, and in two by cholechooduodenostomy alone. In these twenty-nine cases the destruction in the liver had not proceeded so far that regeneration could not take place when the obstruction in the common duct was relieved. The remaining ten cases were found in patients so critically ill that only drainage of the common duct could be attempted. These ten patients died of the disease within two years. It is clear therefore, that as regards surgical intervention the element of time is of great importance.

We arrived at our analysis of the condition and at the method of treating it somewhat fortuitously.

In 1918 we operated on a man, aged 38 who had been deeply jaundiced for two months and who had had mild attacks of pain in the region of the liver. He was emaciated and had the appearance of one suffering from a carcinoma of the head of the pancreas. At operation we found a mass at the head of the pancreas having the appearance of a small carcinoma. The gallbladder was markedly inflamed and distended which threw some doubt on the diagnosis of carcinoma. The

common duct was likewise markedly distended. In preference to anastomosing the thickened and inflamed gallbladder to the stomach, the gallbladder was removed and a cholechooduodenostomy was performed. When the common duct was opened, we found definite thickening and narrowing (edema and infiltration) at the ampulla, and when the duodenum was opened for the purpose of the anastomosis, we saw a large, swollen, reddish, nipple-like projection where the papilla of Vater empties into the duodenum. The anastomosis was of the side-to-side type by a technic similar to the one which will be described later. The patient's jaundice disappeared in three weeks and much to our surprise he gained 30 pounds (13.6 Kg). The conclusion reached was that he had had obstructive inflammatory hypertrophy of the ampulla of Vater and resulting obstructive inflammatory pancreatitis, and that when this process was side-tracked and the intraductal pres-

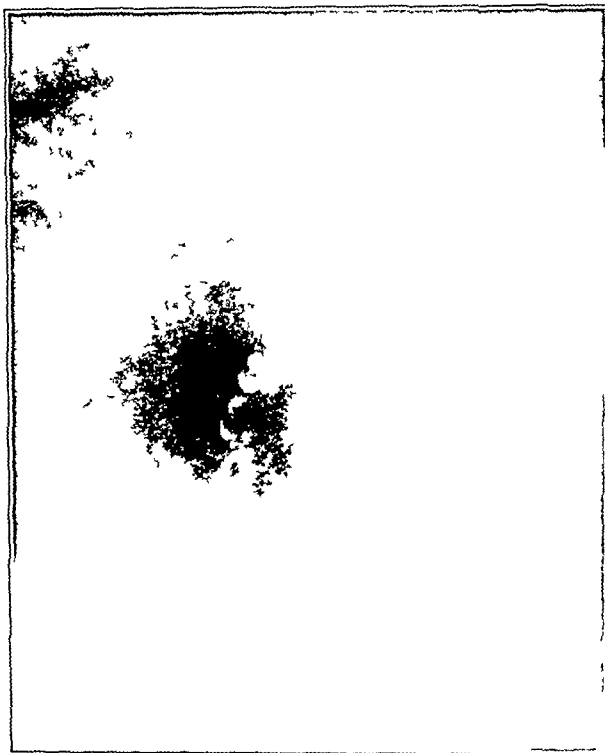


Fig. 1—Roentgenogram showing a barium sulphate meal that has passed through an anastomosis of the common duct and duodenum into the hepatic bile ducts.

sure was relieved by the lateral cholechooduodenostomy, he made a complete recovery. At the time of writing fourteen years after the operation, he is in perfect health.

In a third case of like nature, five weeks after operation the patient was seized with colicky pains, fever and chills and showed mild intermittent jaundice. On fluoroscopy with a barium sulphate meal we noted that the barium sulphate passed through the anastomosis of the common duct and duodenum into the hepatic ducts and filled many of the small ones (fig. 1). Some of the barium sulphate remained in the hepatic ducts for from twenty-four to fifty-six hours. The conclusion reached was that the regurgitation of food into these ducts gave rise to cholangitis and hepatitis. We believed that the regurgitation of the barium sulphate into the liver was due to increased intraduodenal pres-

Because of lack of space the article is abbreviated in THE JOURNAL by the omission of some of the illustrations. The complete article appears in the author's reprints.

Read before the Section on Surgery, General and Abdominal, at the Eighty-fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

The author was carried on by the aid of a grant from the Louis I. Kahn and Koenigsberger Fund to the Research Group of the Michael Reese Hospital. The organization of the research group is as follows: Alfred A. Strauss, M.D., Siegfried F. Strauss, M.D., James Patey, M.D., George J. Meyer, M.D., Herbert Birnberger, M.D., Melville C. Williams, Thaddeus M.D., O. S. Birnberger, M.D., Heinrich Nothmann, M.D., Philip J. Pickett, A. Allen, M.D., Leon Gerson.

sure from the peristaltic contractions which could be relieved by performing a gastro-enterostomy well over on the left side of the stomach. We performed this operation, and the patient's symptoms disappeared. On fluoroscopy we could not force any barium sulphate through the anastomosis of the common duct and duodenum into the hepatic ducts (fig 2)

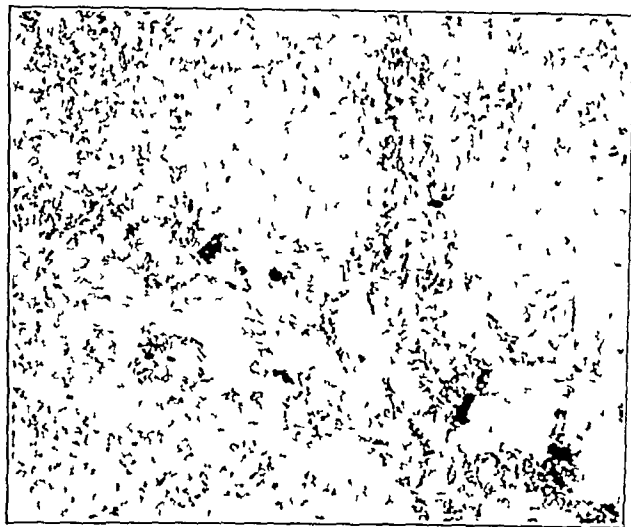


Fig 3—Section of the liver of a new born baby who had a complete atresia of the common duct up to the hilus of the liver. The section shows a breaking down of liver cells and an interlobular cirrhosis due to the irritation caused by mechanical retention of bile

On the basis of the observations in the two cases just cited, we subsequently performed choledochoduodenostomy and gastro-enterostomy on twenty other patients with chronic biliary stasis. We have also performed these operations on five patients with multiple recurrent stones in the common duct.

Patients with chronic biliary stasis can be divided into three groups symptomatically: first, those who have severe colicky attacks simulating gallstone attacks, without jaundice; second, those who have mild, continuous jaundice without acute attacks, in some of these, the jaundice is so mild that it may be overlooked; third, those who have deep silent jaundice. They all have, as the pathologic basis of their symptoms, an infiltrative inflammatory process of the lower portion of the common duct, with thickening and narrowing of the ampulla of Vater. This inflammatory process varies from an extremely mild one to one of the most severe intensity.

We had eight patients of the first type. They had typical colicky attacks simulating gallstone attacks, without jaundice. At operation, there was found a questionable mildly inflamed gallbladder without stones, but with some pericholecystic adhesions and a fairly large common duct. In four of the cases, mild pancreatitis was noted. Cholecystectomy was performed. A few weeks later these patients were again having attacks. Drainage of the common duct was performed, the drainage being maintained for from four to six weeks. At this operation it was noted that only a fine probe could be passed through the papilla. On palpating along the probe, one could ascertain marked thickening and infiltration at the ampulla. The duct was dilated with graduated sounds and a specially constructed dilating instrument so as to stretch and paralyze the sphincter. After this procedure, four of the patients remained well. Their cases were probably of

the type that Judd and Walters of the Mayo Clinic described. The remaining four patients had more severe attacks than ever, beginning within a few months after the second operation. These attacks were numerous and so severe that the patients insisted that something be done for their relief. Choledochoduodenostomy and gastro-enterostomy were performed. All were relieved of their attacks and have remained well. In these cases we were dealing with inflammation and hypertrophy of the papilla of Vater, which produced spasms of the common duct and colicky attacks and which was relieved by choledochoduodenostomy and gastro-enterostomy.

If one considers the sphincteric control of the papilla of Vater in the same light as the sphincteric control of the pylorus of the stomach, one can readily see the similarity here to the pylorospasm, edema and infiltration of the pylorus due to a reflex condition or to an ulcer in the midsection or lower portion of the lesser curvature of the stomach.

We had eleven patients of the second type. These patients had mild jaundice with mild pain in the upper part of the abdomen. They had a peculiar pale "live like" appearance, with marked lassitude and weakness and mild symptoms referable to the upper part of the abdomen with some tenderness over the liver. Two of these patients had been treated for several months by skin specialists for severe itching with no jaundice that could be discerned by the naked eye, while nine of them had mild jaundice which had lasted for from six weeks to six months. The two who had itching of the skin were discovered to have mild jaundice only when the icteric index was shown to be 25 and when it was noted on careful examination of the urine that the test for bile was occasionally positive. In all the other cases, bile was found in the urine and in the

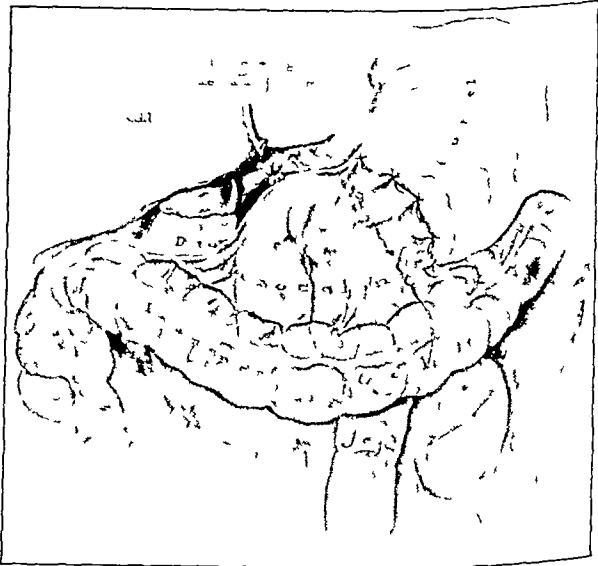


Fig 6—Drawing showing the relationships of the subtotal gastrectomy and the anastomosis between the gallbladder and the cut end of the duodenum

stools at all times. At operation these patients showed a mildly inflamed gallbladder—in four cases, with pericholecystitis. The liver was large and showed marked cirrhosis. The common duct was only moderately distended, but in the lower portion it was thickened and inflamed. The periductal areolar tissue was adherent

to the duct and was freed with difficulty and marked bleeding. The pancreas was hard, swollen and lobulated, and in four of the cases the omentum of the lesser curvature of the stomach was tightly adherent to the capsule, which, when loosened, disclosed marked capillary hemorrhagic infiltration of the pancreas. The gallbladder was removed. The common duct was



Fig 9—Striking increase and new formation of connective tissue in the periportal spaces, chronic cholangitis with an extensive infiltration of lymphocytes, marked degeneration of the hepatic cells.

opened. In three cases it contained water-clear bile. The opening into the duodenum was narrow, a fine probe could be passed only with difficulty, with the exception of two cases in which the probe passed easily. In these two cases we noted that there was a marked infiltration of the common duct almost up to the cystic duct, an infiltration which could easily interfere with the peristalsis and the onward movement of the bile and which explained the stasis. At operation in all cases, a section of the liver was taken for histologic examination. Choledochoduodenostomy and gastro-enterostomy were performed on all these patients, and all made uneventful recoveries.

We have operated on ten patients of the third type. They had deep, silent jaundice with mild or no pain, but some tenderness in the upper part of the abdomen and usually a large, swollen liver. Five had had previous attacks. At operation we usually found a large, dilated, inflamed gallbladder, a considerable number of large lymphatic glands along the common duct and a large, swollen greenish-black liver. In one case the liver took up the greater part of the abdomen. The common duct in these cases was markedly distended and in five cases it was almost as large as the duodenum. When the common duct was opened in these five cases a hydrops of water-clear bile was found both in the common duct and in the gallbladder. A fine probe could be passed through the common duct into the duodenum only with difficulty. The pancreas was hard, swollen and lobulated. Choledochoduodenostomy and gastro-enterostomy were performed on all these patients except one on whom no gastro-enterostomy was done. All but two made uneventful recoveries and remained well. One patient aged 58 suffered from hemiplegia on the sixth day and died. Another patient aged 68 died of a postoperative pneumonia.

The water-clear bile in three cases was due to the inflammatory partial obstruction at the outlet of the common duct which produced mild back-pressure and stasis, thereby causing a chemical irritation and breaking down of the liver cells. This prevented the secretion and excretion of the bile and its pigments. The water-clear bile was the product of the epithelium of the hepatic ducts. The vicious circle established between the infection and the chemical irritation from bile stasis produced the interlobular cirrhosis and breaking down of the liver cells to varying degrees. In some cases, this was so extensive as to produce a picture almost identical with that of subacute yellow atrophy.

To illustrate that mechanical retention of the bile within the liver acts as an irritant producing a breakdown of the liver cells and interlobular cirrhosis, we have the sections of a liver (fig 3) in a new-born baby who had complete atresia of the common duct up to the hilus of the liver. We found that the duct within the liver was patent. The duct was drained with a no. 12 catheter. In about six weeks a spontaneous anastomosis occurred between the duodenum and ducts in the hilus of the liver, the catheter acting as a foreign body. The catheter was removed at the end of three months. The jaundice disappeared, and the baby was well at the time of writing. Sections of the liver of this baby taken at the operation show a definite degeneration of the liver cells and an increase in the interlobular connective tissue which, in this new-born baby, was definitely caused by chemical irritation due to the mechanical retention of the bile and not to infection.

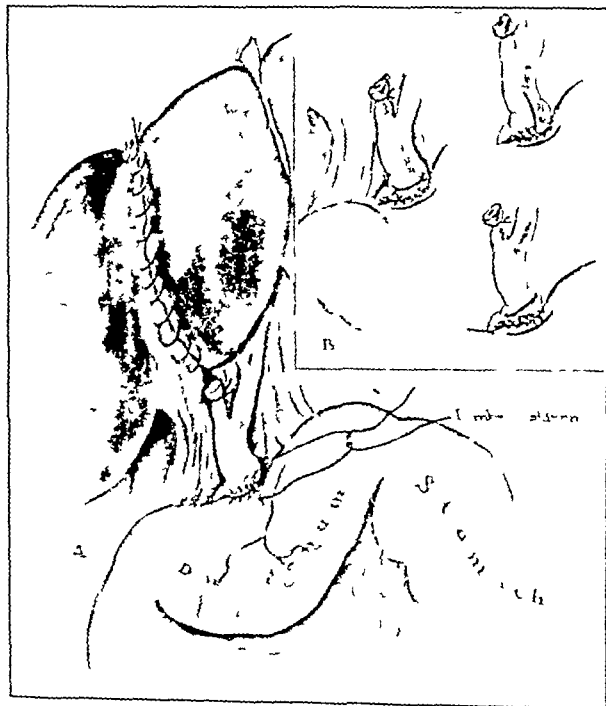


Fig 10—A shows interrupted fine waxed silk sutures of the Lembert type attaching the common duct to the duodenum. B shows various types of incision used in the common duct.

To illustrate the varying effects of this type of chronic obstruction of the common duct on the liver over a period of years, we shall cite two typical cases.

The first case was that of a man aged 51 who had a history of nine months of jaundice. He had repeated chills and fever with a temperature of 105 F, and was bronzed almost black.

At an emergency operation, we found a tremendous greenish-black liver which filled the greater part of the abdomen. The gallbladder was large and distended. The common duct was almost the size of the duodenum, and there were a number of large glands along the duct. The common duct and the gallbladder contained a clear fluid and flakes of pus. Only the finest probe could be passed through the papilla, and this with difficulty. The pancreas was large, swollen and hard. The duodenum also showed some infiltration and inflammation. The gallbladder was removed, and drainage of the common duct with a no. 14 catheter was established. The tube remained in the common duct four months, after which a biliary fistula was established. It took four months for the jaundice to disappear completely. Eight months after operation the fistulous tract was dissected free. A stricture was found at the point below the fistula of the common duct, and there was a marked obstruction at the papilla. The fistulous tract was anastomosed to the duodenum, but no gastro-

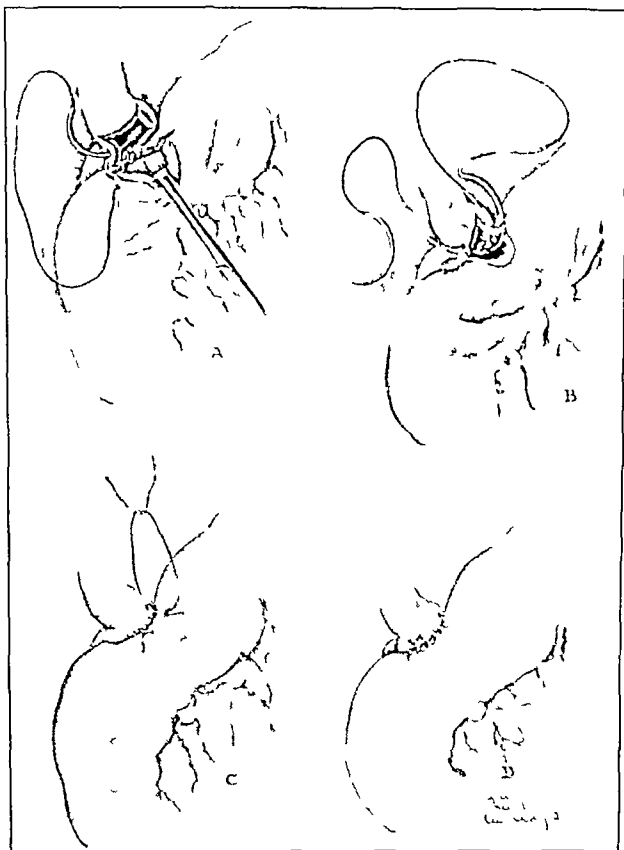


Fig. 14—A and B show the continuous chromic catgut sutures used in making the inner layer of the anastomosis between the common duct and the duodenum. C and D show an outer row of Lembert's interrupted silk sutures making an inversion of the common duct into the duodenum and completing the anastomosis.

enterostomy was performed as we felt that the fistulous tract would not permit regurgitation of bile. The patient recovered, and eight years after operation is well.

This is an excellent example of the tremendous damage that can be done to the liver by chronic obstruction of the common duct due to a local inflammatory process involving the lower end of the duct and the papilla of Vater.

Another patient, a woman aged 56 had deep jaundice with hemorrhage from the bowel and vomiting of coffee ground blood so severe that she became semicomatose. Twenty-six years earlier she had had two severe hemorrhages, and since that time had had repeated attacks of pain in the upper part of the abdomen on the right side with marked lassitude and

pallor. Three times during this period of twenty-six years she noticed that she was mildly jaundiced. After she had been given several transfusions of blood, we operated. We found a small hob-nailed liver about one fourth of its normal size, a large carbuncle-like ulcer of the duodenum just above the papilla of Vater (fig. 4), a markedly thickened pipe stem infiltration of the common duct, extending almost to the cystic duct, and many large glands along the common duct. The gallbladder was only mildly inflamed. On account of the extensiveness of the ulcer, which formed a mass the size of a small egg and on account of the marked infiltration of the common duct, we decided, in spite of the deep jaundice, to do a subtotal gastrectomy. The ulcer was excised, and the jaundice was relieved by anastomosing the gallbladder with the cut end of the duodenum (figs. 5 and 6). It was impossible to anastomose the inflamed common duct with the duodenum, since the ulcer was at the point where the anastomosis would be made. The patient's jaundice disappeared within six weeks. Five years after operation, she had gained 30 pounds and was in good health in spite of the fact that she had a definitely hob-nailed liver one fourth its normal size.

The hob-nailed liver can be explained on the basis of an infection ascending from the ulcer near the papilla which the recurrent attacks of inflammation and infection produced. This ulcer was known to have existed for twenty-six years. If this cirrhosis and hob-nailed liver were of a constitutional or intrahepatic type and not of the obstructive type the patient would not have recovered and would not be in good health at this time.

In by far the largest number of cases of jaundice associated with stone in the common duct the condition is due to the edema swelling and inflammation of the ampulla rather than to the stones. The stones and debris in the common duct act merely to maintain the inflammatory process. It is only occasionally that a stone is wedged into the papilla to produce actual obstruction. In other words, there is no difference in the pathologic basis between the series that we have just described and the cases associated with stones in the common duct except that in the former cases the jaundice is more chronic and in the latter it is more intermittent.

Five patients with recurrent stones in the common duct, from one of whom the stones had been removed twice previously, were operated on by choledochoduodenostomy and gastro-enterostomy. We felt that the stasis produced in the common duct which probably leads to crystallization of bile and stone formation could be relieved by an anastomosis, doing away with the sphincteric control of the papilla, and that if stones should form, they would easily pass through the anastomosis. All of these patients made uneventful recoveries.

We may speculate as to whether or not patients who have suffered from intermittent subacute pancreatitis of the duct-ascending infectious type, characterized by pain in the upper abdominal region, severe pain in the back, diarrhea and in some instances transient glycosuria would not be better relieved by choledochoduodenostomy and gastro-enterostomy. This would relieve the back pressure and so prevent the spread of infection into the pancreatic duct.

PATHOLOGY

The liver in cases of the type we have described usually is swollen and large. It varies from yellowish to greenish black in the more severe cases. If the lesion is of the milder type and of long standing, the liver shows a marked increase in the interlobular con-

nective tissue, which varies from that of a mild cirrhosis to that of a hob-nailed liver. Histologically, besides the increase in the connective tissue, there are marked vacuolation and destruction of the liver cells, which, in some of the cases, gives a microscopic picture similar to that of subacute yellow atrophy (fig 9) (figs 7, 8 and 9).

A section of liver taken at operation in a critically ill patient on whom a choledochoduodenostomy could not be performed but on whom a drainage of the common duct was done showed marked degeneration of the liver cells and interlobular cirrhosis (fig 10). After five weeks of drainage the patient died. At autopsy a section of liver showed marked regeneration of the liver cells and the formation of new bile ducts (fig 11), proving that, in this condition, relieving the intraductal tension by anastomosis of the common duct and duodenum has a curative effect.

The pancreas varies from a medium hard, lobulated type to a hard, swollen type. In several cases, there was marked peripancreatitis in which the omentum of the lesser curvature of the stomach was tightly adherent to the capsule of the pancreas (fig 12).

TECHNIC OF OPERATION

The technic of anastomosis of the common duct and duodenum is as follows:

The gallbladder, which was inflamed in all of our cases, is removed in the usual manner. The site for the choledochoduodenostomy should be at the point where the common duct is attached to the duodenum, the peritoneal covering and loose areolar tissue acting as the base for the anastomosis.

Interrupted, fine, waxed silk sutures of the Lembert type are used to attach the broad surface of the common duct to that of the duodenum (fig 13 A). A curved incision with a small "y" at each end is made transversely across, or obliquely to the duct, and a slightly curved incision into the duodenum (fig 13 B).

The medial portion of the cut end of the muscularis and mucosa of the duodenum is then sutured to the medial cut end of the duct, using 0000 twenty day chromic catgut and continuous sutures, and starting in the middle of the posterior wall with a simple oblique over and over suture as in a gastro-enterostomy (fig 14 A and B). An outer row of Lembert's interrupted silk sutures are then brought through the common duct and duodenum to produce an inversion (fig 14 C and D).

The free edge of the attached omentum is then brought over the entire anastomosis and sutured onto it so as to prevent leakage of bile, the omentum seals it off quickly. The omentum is sutured down with interrupted silk sutures (fig 15 A). The inversion of the second row of Lembert's sutures and the flap of the transverse incision produce a one-way valve type of anastomosis as shown on cross-section (fig 15 B and D). A typical posterior gastro-enterostomy well over to the left side of the stomach is performed, as in figure 15 C.

The gastro-enterostomy, we believe is of great importance, it not only prevents the biliary meal from passing through the anastomosis of the common duct and duodenum up into the hepatic ducts but it throws the processes of digestion to the left and puts the duodenum, liver and pancreas at physiologic rest, or at their lowest physiologic limit. It accomplishes this by allowing the peristalsis of the duodenum and preventing chemical and mechanical irritation by food, which passes for the most part, through the gastro-enterostomy. We lay great stress on this point because as we have stated, the probable underlying etiologic factor that produces the spasm, edema and infiltration of the common duct and papilla of Vater is a triangular infection which starts in the duodenum as a duodenitis and then ascends through the papilla of Vater up the hepatic and pancreatic ducts. The effect of the gastro-enterostomy can be compared to the healed duodenum and ulcer observed when one is doing a subtotal gastrectomy for gastro-jejunal ulcer from a previous gastro-enterostomy.

COMMENT

Some observers may contend that the infection in these cases has its origin in the gallbladder. Yet in most of our cases the inflammation in the gallbladder seemed mild as compared with that in the lower end of the common duct, and it was our impression that the latter furnished the real pathologic process and that the infection must have had its origin there rather than in the gallbladder. Therefore, to relieve it, we anastomosed the common duct to the duodenum and performed gastro-enterostomy in preference to depending on cholecystectomy and drainage.

Some of the patients on whom we performed choledochoduodenostomy and gastro-enterostomy might have recovered with simple drainage of the common duct,

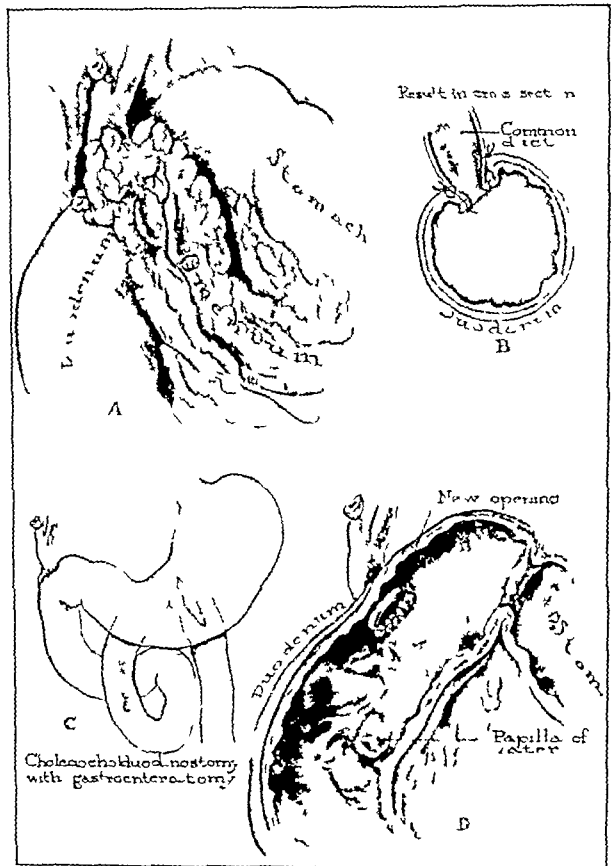


Fig 15—A shows the omentum sutured down with interrupted silk sutures so that it covers the anastomosis. B shows a transverse section of the inversion of the common duct into the duodenum. C shows the relationship of the new opening to the papilla of Vater. D shows the gastro-enterostomy placed well over to the left and the choledochoduodenostomy.

or with no operation. We contend, however, that it is more conservative to do one operation that cures, as shown in this series than to do three, in the third of which one has to do what should have been done at first.

CONCLUSIONS

1 Cases of chronic biliary stasis of the types that we have described are caused by a triangular infection of the duodenum, pancreas and common duct. The infection probably begins as duodenitis and ascends the common duct. It produces infiltration and swelling of the ampulla of Vater and of the lower portion of the common duct and thereby causes spasm and

obstruction of the papillary outlet of varying intensity. A vicious circle is established between the chronic infection and the chemical irritation caused by the stasis and back pressure of bile which produces degeneration and vacuolation of the liver cells and interlobular and periductal cirrhosis.

2 A perfect example of such chemical irritation in the liver occurs as the result of congenital obstruction in the common bile duct of the new-born.

3 There is a probability that cirrhosis of the liver in the greater number of cases is due to this type of infection rather than to a constitutional condition or to intrahepatic causes.

4 Attacks simulating gallstone attacks, are in some cases, due to obstructive spasms of the common duct.

5 All patients with chronic jaundice should have the benefit of exploration. This should not be deferred too long since the breakdown of the liver may go beyond the point of recovery, as shown in ten cases in which recovery did not take place after drainage.

6 Gastro-enterostomy is an important addition to choledochoduodenostomy because it prevents the regurgitation of food through the anastomosis between the common duct and the duodenum and puts the triangle of the duodenum, pancreas and hepatic ducts, which are the seat of this infection at rest.

7 Most of these patients with chronic obstructive jaundice can be cured by choledochoduodenostomy and gastro-enterostomy when performed in time as shown by the mortality of two deaths in our twenty-two cases.

8 Patients with recurrent multiple small stones in the common duct are best operated on by choledochoduodenostomy and gastro-enterostomy.

9 A follow-up of the cases in which we performed choledochoduodenostomy and gastro-enterostomy shows ten of the twenty patients to be still living and well. Two have died of pneumonia and one of coronary sclerosis. The remaining seven we have lost track of.

ABSTRACT OF DISCUSSION

DR J. TATE MASON, Seattle. The late Dr. John B. Murphy called my attention to the fact that patients with cholangitis, duodenitis, pancreatitis or constriction of the common duct causing jaundice were relieved by prolonged drainage of the common duct. This was done by placing a T-tube in the duct and leaving it in place for many months. Undoubtedly the neuromuscular nerve supply of the duct plays a very important role in biliary stasis. The parasympathetics which supply the propulsive action of the duct and the sympathetics, which control the ampulla of Vater, may have great influence through reflex action on both these structures as well as have inflammatory conditions in and around the duct. The reason patients with common duct disturbances causing jaundice have external drainage performed frequently and not an internal drainage such as Dr. Strauss has suggested in his choledochoduodenostomy is that anastomosis between the biliary system and the stomach or the duodenum invariably leads, if the anastomosis works and the patient lives long enough to an ascending infection, followed by hepatitis, cirrhosis and finally multiple abscesses of the liver. It is encouraging to learn from this study of Dr. Strauss that a gastro-enterostomy which diminishes intragastric and intraduodenal tension not only arrests this infection but prevents the splashing up as he says of the duodenal contents into the common duct and prevents this ascending infection. Many of these patients are poor surgical risks and if one has to do a choledochoduodenostomy and then a gastro-enterostomy the operation may be so prolonged that some immediate postoperative complication may occur. For some years I have used a simple method that I devised of anastomosing the common duct to the duodenum. Sometimes because of lack of exposure dense adhesions or a duct that

is not very large this anastomosis is prolonged and may be very difficult. As soon as the common duct is exposed just above the duodenum two traction sutures are placed between the duodenum and the duct on each side. With these, because the duct is always deep down and rather hard to expose, one can make a transverse incision in the duct and also a stab incision in the duodenum, then by pulling up on these sutures it is very easy to put in the posterior line of sutures. I now select a rubber tube 5 cm. long and about the size of the common duct and place a suture at the middle. This tube is then inserted into the opening, one end into the common duct and the other into the duodenum, and the traction sutures are cut off but with the suture in the tube there is still something to tug on. By tugging gently on this I now sew up as closely round this ligature as possible. After the incision is sutured up completely round the tube, the traction suture is cut away and to keep the rubber tube from staying too long in the anastomosis, at the close of the operation it is pushed down into the duodenum approximately two thirds of its length, it being quite easy to feel the tube through the anastomosis. This anastomosis can be done in from five to twelve minutes. With this method of anastomosis of the common duct to the duodenum, in many instances a gastro-enterostomy will be possible, whereas otherwise the two procedures would take too much time. If these patients are to be operated on I should not wait until there is much damage to liver tissue or until the liver takes up two thirds of the abdominal cavity. It should be done as early as the diagnosis can be made.

DR. WAITMAN WAITERS, Rochester, Minn. In talking with Dr. Strauss I found that we both were emphatic in our decision that this procedure is indicated in relatively few cases of obstruction of the common bile duct, because in most cases there is a demonstrable cause for the obstruction. In order of frequency such obstructions are caused by the following: stones in the common bile duct, inflammation in the gallbladder which has extended by continuity into the common bile duct, the pancreas and the hepatic ducts, papillomas, adenomas or carcinomas of the ampulla of Vater and the relatively rare ulcers on the posterior wall of the duodenum which have perforated into the pancreas producing the severe colic that is associated with biliary colic and occasionally producing so much inflammation and edema in the pancreas that the common bile duct is slightly constricted and the patient slightly jaundiced. Therefore if Dr. Strauss's cases are considered in groups, the group in which the procedure is most satisfactory I am sure all will agree is that of cases of tumor in the head of the pancreas that produces painless jaundice. Such a group constituted half of Dr. Strauss's series. The tumors are chiefly carcinomas. In my experience approximately 15 per cent of tumors obstructing the pancreatic portion of the common bile duct are inflammatory, and it is very difficult to distinguish at the time of operation between the two types of enlargement of the head of the pancreas. Certainly the relief of obstruction by anastomosis between the distended gallbladder or common bile duct and the duodenum or stomach will prolong the patient's life. If carcinoma is the cause of the obstruction the patient is relieved of the jaundice and the intense pruritus although eventually he will die of the lesion. In many of these cases later, a gastro-enteric stoma will have to be made to relieve the obstruction caused by the mechanical encroachment on the duodenum by the enlargement of the tumor in the head of the pancreas. Therefore if the surgeon feels that the condition of the patient is such that both procedures can be carried out at one operation such a decision is wise. In the first group of eight cases approximately a fourth of Dr. Strauss's cases the patients had biliary colic without jaundice. Treatment was conservative, the diseased gallbladders were removed, the ducts were opened and drained and in four of his cases the colic recurred. Following the procedure that he has suggested, namely, anastomosis of the duct to the duodenum the patients were relieved. I differ with Dr. Strauss's decision relative to the second group. In these cases there is inflammation in the gallbladder associated with jaundice, thickening in the head of the pancreas and infection of the bile. I believe that in these cases the jaundice is the result of the inflammation starting in the gallbladder and extending to the common bile duct, the pancreas and the liver and that removal of the gallbladder and drainage of the com-

mon bile duct by a T-tube, a much less potentially serious surgical procedure, will relieve the patient in the majority of cases

DR ALFRED A. STRAUSS, Chicago I agree with everything that Drs Mason and Walters have said except with that difference that it still has to be decided whether this is a triangular infection

SUCCESSFUL REMOVAL OF AN ENTIRE LUNG FOR CARCINOMA OF THE BRONCHUS

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AND

J. J. SINGER, M.D.

ST. LOUIS

Carcinoma of the bronchus in recent years has become a problem of major importance. It is now known that primary carcinoma of the lung, which almost always arises in a bronchus, constitutes between 5 and 10 per cent of all carcinomas.¹ In frequency, therefore, it is comparable with carcinoma of the large intestine and it is much more frequent than the malignant tumors of some other organs that have received much more comment. The problem of primary carcinoma of the lung is of special importance, since up to the present time at least the prognosis has been almost uniformly bad because of the complete futility of any methods of treatment other than surgical excision. There is no record in the literature of the successful treatment by radiotherapy of a single case in which the pathologic evidence has been incontrovertible and in which a five year interval without recurrence has elapsed between the treatment and the time of reporting the case, despite the fact that many cases have been treated according to the most modern methods of using both x-rays and radium. It would seem, therefore, that unless some entirely new general principle in the treatment of carcinoma is devised, the only method that at present can offer any hope is the wide surgical removal of the tumor and the surrounding tissue.

In a recent extensive review of the literature, Carlson and Ballou² of the Barnes Hospital have discussed the reported cases in which surgical removal has been accomplished or attempted. In all there are apparently six cases in the literature in which a patient has survived the surgical removal of the carcinoma and has been well at the time of the report a year or more later. Two of these patients were operated on by Sauerbruch,³ one by Churchill,⁴ two by Tudor Edwards⁵ and one by Allen and Smith.⁶ In these reported cases only a limited removal of lung tissue has been performed amounting however in most cases to the removal of one lobe of the lung. In Churchill's case the lower and middle lobes of the right lung were removed. There have also been six cases reported in which malignant tumors of the bronchi have been removed by means of the bronchoscope. In practically all the latter cases however there is no evidence that survival has extended beyond one year. The case about

to be reported is apparently the first one in which an entire lung has been successfully removed for a carcinoma. In fact, it is apparently the first time in which the whole lung has been deliberately removed at one stage. It is possible that Kummell⁷ removed the whole lung for a carcinoma, but the description of the case is so meager that it is difficult to be sure. At any rate, the patient died. There are two instances in which an entire lung has been removed for bronchiectasis, one by Nissen⁸ of Berlin and the other by Haight⁹ of Ann Arbor, Mich. In both the latter cases, however, the lung was allowed to slough out after ligation of the hilus. It seems particularly important to call attention to the fact that an entire lung has been successfully removed for carcinoma of the bronchus because if this should prove to be a feasible operation in properly selected cases it is probable that many patients would be saved who otherwise would die of carcinoma.

REPORT OF CASE

J. L. G., a man, aged 48, a physician, admitted to the Barnes Hospital, Feb. 27, 1933, had had repeated attacks of cough and fever with pain in the left side of the chest for a period of

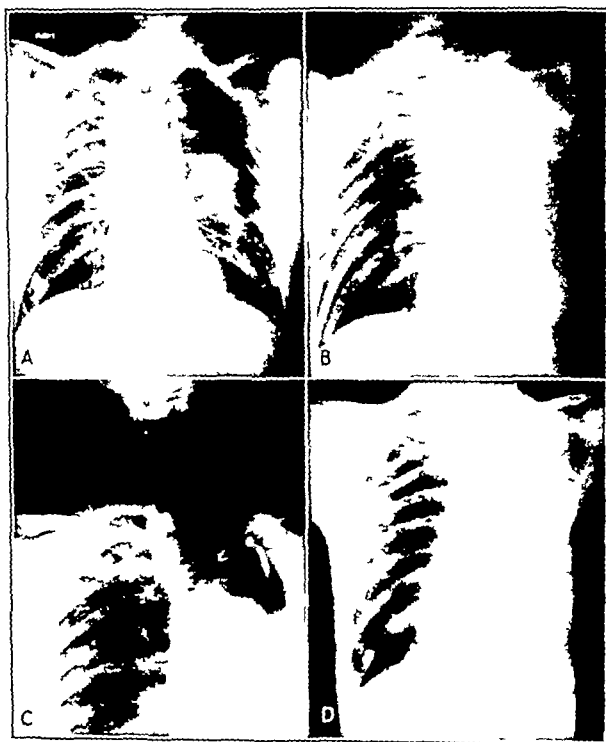


Fig. 1.—Carcinoma obstructing the bronchus of the left upper lobe. A, atelectasis of the left upper lobe with the surrounding pneumothorax. B, after removal of the entire lobe and all but the first two ribs. The air-tight catheter leading to the stump of the bronchus is seen. C, drainage of the empyema cavity that was caused by leaving the first two ribs in place. D, at time of discharge from the hospital and after the removal of the first two ribs the empyema cavity is completely obliterated and the wounds are solidly healed. The trachea is in the midline.

seven months. Other complaints were loss of weight and general lassitude. In January, 1929, he had a pneumonia of the lower lobe of the right lung (the other lung). The pneumonia in the right lung was said to have spread and to have involved the entire lung. After several weeks, however he stated that he recovered fully from the attack of pneumonia until his symptoms appeared insidiously in the left lung more than three years later.

From the Medical and Surgical Chest Service of Barnes Hospital and the Washington University School of Medicine.

¹ Junglinn, Herbert. *Ztschr. f. Krebsforsch.* 28: 73 (1929).
² Carlson, H. A., and Ballou, H. C. *The Operability of Carcinoma of the Lung*. *J. Thorac. Surg.* 2: 323-348 (April) 1933.
³ Sauerbruch, F. *Chirurgie de l'Organe* 1: 840-850 (1927).
⁴ Churchill, E. D. *J. Thorac. Surg.* 2: 254-266 (Feb.) 1930.
⁵ Tudor Edwards, A. T. *Brit. M. J.* 1: 527 (May 2) 1930.
⁶ Allen, C. I., and Smith, F. L. *Surg. Gynec. & Obst.* 55: 111 (Oct) 1932.

⁷ Kummell. *Zentralbl. f. Chir.* 28: 27 (1911).

⁸ Nissen, R. *Zentralbl. f. Chir.* 78: 603 (Nov. 21) 1931.

⁹ Haight, Cameron. Personal communication to the authors.

In July, 1932, he complained of malaise with chilly sensations and a temperature of 104 F. At that time nothing was found on physical examination to explain his symptoms. The leukocytes numbered 17,000. August 11, a roentgen examination revealed a fan-shaped shadow with the base outward in the region of the left axilla. By August 20, his symptoms had subsided and the x-ray shadow had become smaller. October 7 he had a repetition of his former symptoms with a return of the former x-ray shadow. These symptoms subsided in a few days but recurred again about October 20. At this time there was some dullness, and a diagnosis either of interlobar empyema or of lung abscess was made. When an attempt was made to aspirate pus, December 5, a pneumothorax developed, after which a marked improvement in his symptoms was noted although there was a complaint of some pain in the left side of the chest. Artificial pneumothorax was then continued and the patient showed steady improvement until ten days before his admission to the Barnes Hospital (Feb 17, 1933) when he had a recurrence of fever and discomfort. At no time was there any actual pain and never any bloody sputum.

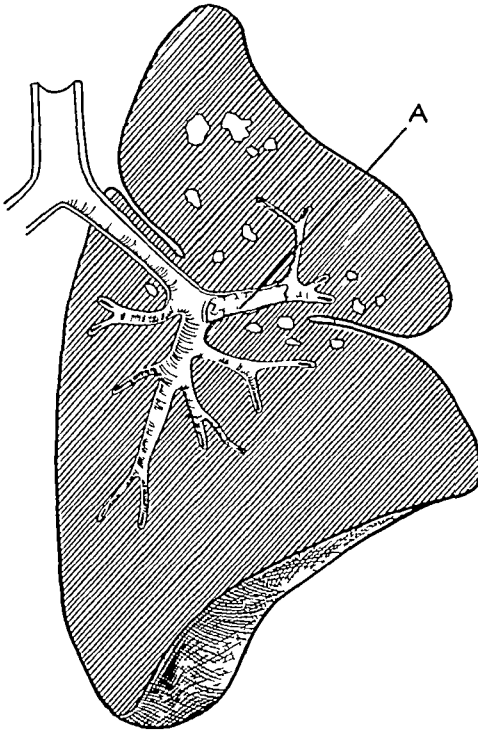


Fig 2—Diagram of lung showing (A) location of the tumor in the bronchus of the upper lobe but extending so far medially as to project slightly into the bronchus of the lower lobe. For this reason it was impossible to attempt to save the bronchus of the lower lobe. The location of numerous small abscesses is also seen on the diagram as well as the incomplete interlobar fissure.

The patient was of medium build with a suggestion of loss of weight and a rather pale complexion. The left side of the chest moved less than the right, and the breath sounds were diminished or absent on that side. A roentgen examination showed the left upper lobe to be atelectatic with pneumothorax present. The lower lobe seemed to be fully expanded and adherent to the chest wall. The blood examination showed 4,800,000 red cells, 11,500 leukocytes and 85 per cent hemoglobin. Because of the presence of the atelectasis of the upper lobe and in view of the patient's history of an insidious onset, a diagnosis was made of an obstruction of the bronchus of the upper lobe probably by a tumor. Bronchography with iodized oil substantiated the diagnosis of obstruction of the bronchus of the left upper lobe. A bronchoscopic examination was accordingly advised and performed by Dr Arbuckle March 1. At this time tissue was removed which seemed microscopically to be only granulation tissue. The patient's symptoms improved following this examination because the obstruction of the bronchus had been somewhat relieved. A bronchoscopic examina-

tion was repeated on March 14 and again on March 21, at which specimens were removed again at both examinations. Both of these specimens revealed a squamous cell carcinoma of the bronchus. The patient was advised to have the left upper lobe removed because of the presence of the carcinoma obstructing the bronchus of that lobe.



Fig 3—Mesial aspect of lung after removal. The main bronchus of the lower lobe (A) has been split open. The tumor (B) is seen projecting from the bronchus of the upper lobe.

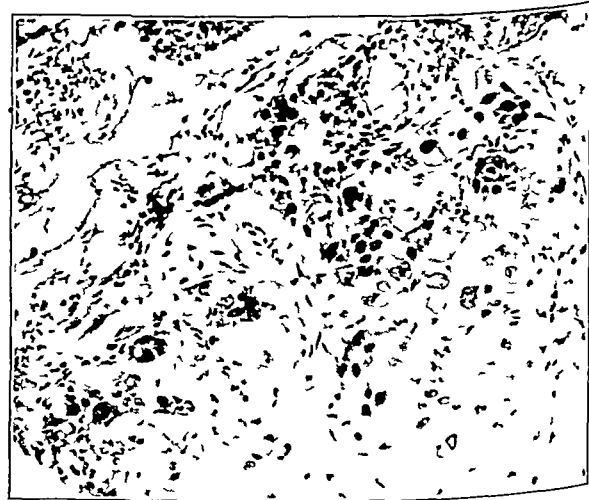


Fig 4—Specimen obtained at biopsy through a bronchoscope.

At the operation, however, which was performed, April 5, with intratracheal anesthesia of nitrous oxide and oxygen, it was found that the carcinoma extended so closely to the bronchus of the lower lobe that it was impossible to save the latter bronchus. Moreover there were many nodules in the upper portion of the lower lobe about which uncertainty existed as to whether they were tumor tissue or areas of inflammation.

Finally also the interlobar fissure was not complete. For all these reasons it was decided to remove the entire lung. The adhesions between the lower lobe, chest wall and diaphragm were separated without great difficulty. A small rubber catheter was tied tightly around the hilus as close to the trachea as possible. Crushing clamps were placed on the hilus below the catheter and the lung was cut off with an electric cautery knife. The open end of the left main bronchus was carefully cauterized with the actual cautery as far up as the catheter would permit in order to destroy the mucous membrane thoroughly. A transfixing double ligature of number 2 chromic catgut was tied around the stump just distal to the catheter and the latter was then removed. No bleeding occurred. Another transfixing ligature of number 2 chromic catgut was placed where the catheter had been. The stump of the pulmonary artery was then ligated separately with catgut, and seven radon seeds of 15 millicuries each were inserted into various parts of the stump. Several enlarged tracheobronchial glands were removed from the mediastinum, and seven ribs, from the third to the ninth, inclusive, were removed from the transverse processes of the spine to the anterior axillary line. The ribs were removed for the purpose of allowing the soft tissues of the chest wall to collapse against the bronchial stump and therefore to obliterate as much as possible the pleural cavity. The first and second ribs were not removed at this time merely because it was desired not to do too much

both from the previous accumulation of air in the unobliterated portion of the cavity and also because the patient was coughing up pus, that there was a small communication between the unobliterated portion of the pleural cavity and the bronchial stump. After about two weeks the drainage tube slipped out of the cavity and was found on the dressings. The wound had healed sufficiently so that it was difficult to replace the catheter. It was therefore decided to reestablish drainage anteriorly

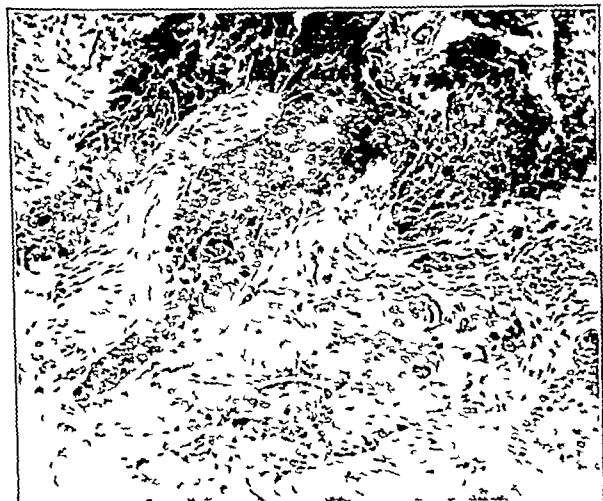


Fig 5—Specimen obtained from the tumor after removal of the lung. A careful examination of many slides showed the bronchial cartilage everywhere to be intact.

operating at once. Nevertheless it was felt that there would be some danger of the development of an empyema in the upper part of the pleural cavity because of the failure to obliterate that space. The wound was closed tightly, but provision for drainage was made by the use of an air tight catheter brought out through a stab wound.

The patient left the operating room in excellent condition but was nevertheless given a transfusion of 500 cc of blood. The closed drainage yielded about 800 cc of sero-sanguineous fluid during each of the first two days. After that period the drainage rapidly diminished and practically ceased on the fifth postoperative day. The catheter was gradually withdrawn. The wound healed by primary intention. There was surprisingly little immediate postoperative reaction of any kind except for a moderate amount of dyspnea on exertion and deep seated pain in the back which was controlled with opiates. On the ninth postoperative day there was a collection of air and pus in the extreme upper portion of the pleural cavity. The rest of the pleural cavity was completely obliterated by what seemed to be solid healing of the soft tissues of the chest wall against the mediastinal pleura. The small empyema cavity in the upper part of the thorax was drained through a stab wound made posteriorly just below the second rib. It was evident

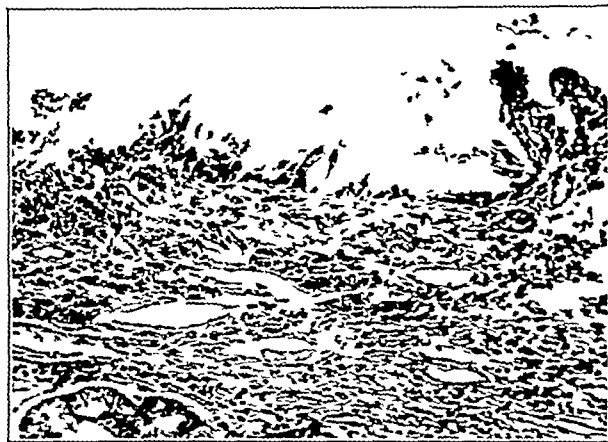


Fig 6—Section through the wall of the bronchus about 0.5 cm mesial to the tumor. There is no evidence of carcinoma at this place. Evidently therefore, the tumor was confined to its original location.

in order to have the back free from infection when the first and second ribs should be removed. A small drain, therefore, was placed through the first interspace, anteriorly, for a few days. The patient's temperature and pulse had been normal during the entire time of the drainage of the empyema cavity. May 22, through a posterior incision, the first and second ribs were removed in almost their entire length. There was almost no reaction after this operation. The small remnant of pleural cavity was completely obliterated at once.

The pain in the back subsided and within three weeks the wounds were all solidly healed. The patient's strength gradually increased, his appetite was excellent and he was discharged from the hospital, June 18, looking and feeling better than he had for many months previously. His only complaint was some dyspnea on exertion, but he had been walking about

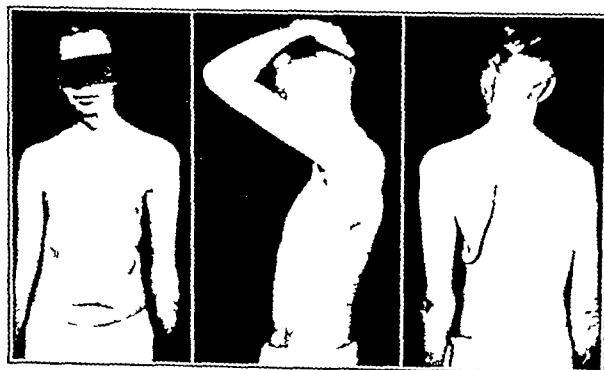


Fig 7—The patient at time of discharge from the hospital. The wounds are solidly healed and he has good movement of the left arm.

the hospital for two weeks before his discharge. His vital capacity on admission was 3500 cc. at his discharge it was 1650 cc. Also at the time of discharge an examination of the blood showed 5,100,000 red cells, 8,500 leukocytes and 90 per cent hemoglobin. An electrocardiogram was essentially normal and a roentgen examination showed the left pleural cavity to be completely obliterated. A report received from him July 25 five weeks after his discharge stated that he had gained 8 pounds (3.6 kg.) at home that he was able to walk

about a mile without much dyspnea, that he was driving his automobile and that his strength was rapidly improving. The dyspnea was rapidly becoming less.

COMMENT

The examination of the lung after its removal was encouraging, because it showed no evidence of any extension of the carcinoma beyond the original site. The whole tumor measured only about 1 cm in the long diameter, but it was situated almost at the bifurcation of the main bronchus into the bronchus of the upper lobe and that of the lower lobe. The nodules, which had been felt in the lung at operation, were small abscesses that showed no evidence of carcinoma on microscopic examination. Likewise, the enlarged tracheobronchial glands, which had been removed from the mediastinum, showed no evidence of carcinoma. The tumor itself was definitely a squamous cell carcinoma. A feature of it, which is probably important, was that it had not invaded the bronchial cartilage. By analogy with what is well known concerning carcinoma of the larynx, the failure of the tumor to invade the bronchial cartilage in this case would seem to be of excellent prognostic significance.

Several features about this case warrant special comment. In the light of the experience derived from this first case of complete removal of a lung, together with many of the mediastinal tracheobronchial glands, for carcinoma, the operation would seem to be one that is entirely feasible in properly selected cases. Just as experience with carcinoma in other parts of the body has taught that the number of cures is, in general, directly proportional to the extent of radical removal, so it may be inferred, perhaps, that if the entire lung is removed the patient will have less chance of a recurrence than if only one lobe or a smaller portion is removed. In order, however, to have a creditable number of successes, surgeons who are properly qualified by experience in this special field to perform such an operation must receive the patient before extensive metastases have occurred. There is now little excuse for the common failure to diagnose a carcinoma of the bronchus in its early stages. Certainly the majority of such tumors can be diagnosed before demonstrable metastases have occurred.

Another feature of peculiar interest in this case is that, despite the fact that the hilus of the entire lung was suddenly shut off by a tight ligature, none of the signs or symptoms of pulmonary embolism appeared. The sudden obstruction of the pulmonary artery of the left lung by the ligature was analogous to the sudden obstruction of it by an embolus. Nevertheless, not the slightest change in the character of the patient's respiration could be noted immediately following the application of the ligature. Possibly the fact that he was receiving intratracheal anesthesia was of importance.

SUMMARY

The left lung and many of the tracheobronchial mediastinal glands were removed in a one stage operation because of a carcinoma that originated in the bronchus of the upper lobe but which was so close to the bronchus of the lower lobe that, in order to remove it completely, it was necessary to remove the entire lung. This is apparently the first case in which an entire lung has been removed successfully at one stage.¹⁰
600 South Kingshighway

10 A letter from the patient written on Sept. 19, 1933, four and one half months after the operation states that his weight has increased by 16 pounds (7.3 kg.) since leaving the hospital and that he is constantly gaining in strength and energy.

TORUS FRACTURES OF THE LOWER EXTREMITY OF THE FOREARM IN CHILDREN

CARL L. GILLIES, M.D.

CEDAR RAPIDS, IOWA

Torus or folding fractures (Stauchungsbruch, par tassement) of the lower extremity of the forearm is the most common bony injury of childhood.¹ It is characterized by a localized expansion or torus of the cortex accompanied by very little or, in some cases, no displacement of the lower end of the bone.

These fractures have long been recognized. Thore, in 1844, was first to collect observations, which he supplemented with studies on cadavers. De Quervain,² Iselin,³ Vulliet,⁴ Burnham,⁵ Troell¹ and many others have studied and written of this type of fracture. In spite of this fact, these injuries are not generally understood and are not discussed in most textbooks devoted to the study of fractures.

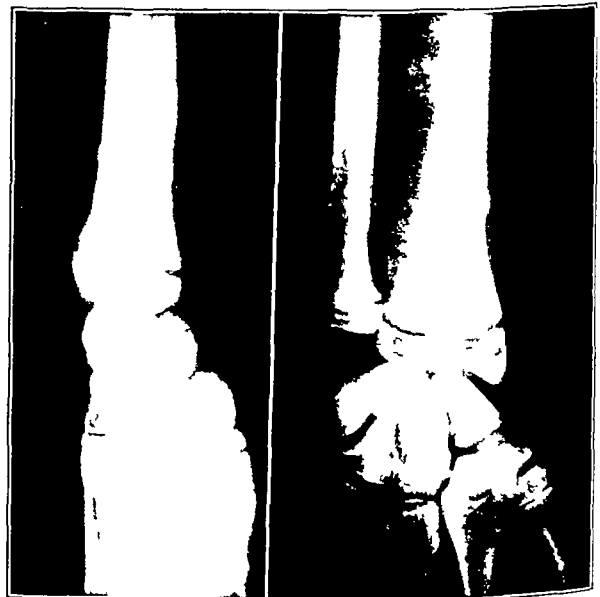


Fig. 1—Torus fractures of both bones with slight posterior tilting of the distal fragments.

These bony injuries are of importance, first because of their extreme frequency and, secondly, because they are true fractures, as evidenced in late cases by the production of callus. They cannot be considered important from the standpoint of prognosis, as they are the least serious of all true forearm fractures.

A fall on the outstretched arm, the hand striking the ground in dorsiflexion, is usually the method of production. A longitudinal compression or thrust force is exerted on the radius first and then on the ulna if the force continues. The long bones of the forearm in children may be likened to and, in fact, are hollow.

Read before the Section on Radiology at the Eighty Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.
1 Troell A. On Fractures of the Forearm in the Region of the Wrist. *Ann Surg* 72: 428-451 (Oct.) 1920.

2 Thore quoted by Iselin.³
3 de Quervain Fritz quoted by Iselin⁴ and Vulliet.
4 Iselin Hans. Stauchungsbrüche der kindl u. jugendl. Knochen. *Beitr z klin Chir* 79: 440-461, 1912.
5 Vulliet H. Les fractures de l'extremite inferieure du radius chez l'enfant. *Semaine med Paris* 34: 277-278 (June) 1914.
6 Burnham A. C. Fractures About the Wrist in Childhood and Adolescence. *Ann Surg* 64: 318-323 (Sept.) 1916.

elastic tubes surrounded by a relatively tough membrane, the periosteum, the lower end being strengthened by an increase in circumference and by the presence of cancellous bone

In the production of these fractures, the cylindrical shaft is compressed in a longitudinal direction, and the diameter is enlarged at the expense of the length, as evidenced by a localized bulging or torus followed by a bending or flexion. The fracture occurs in the weakest portion, which is near the junction of the diaphysis with the metaphysis, a point relatively higher than the classic wrist fracture in adults. Most frequently the posterior surface (fig 1) but in a minority of cases the anterior surface (fig 2) shows the greatest bulging, and the upper portion (diaphysis) may encroach on the medullary canal. In either case both the mesial and lateral surfaces, at the same level, will show some degree of bulging. These are not greenstick fractures in the true sense of the word. If the force continues, the cortex opposite the greatest torus gives way, accompanied by an increase in deformity, and the fracture may become complete. Likewise, whether one or both bones is involved depends on the character of the force received.

Clinically, the diagnosis of torus fracture is made by

- 1 Reluctance on the part of the child to use the extremity following a fall on the outstretched forearm
- 2 A localized swelling located from $\frac{3}{4}$ to $1\frac{1}{2}$ inches above the wrist
- 3 "Winching" tenderness on pressure confined to the bone directly beneath the area of swelling
- 4 Mild deformity not present in all cases
- 5 Absence of crepitus

The diagnosis should always be confirmed by roentgen examination

Doubtless, many of these cases would show good results without any treatment whatever. It is advisable, however, for the protection of the attending physician, to use splints in all cases and this for two reasons. First, the lay mind does not distinguish between the different types of fractures, and, secondly, as children are subject to frequent falls, a subsequent injury might easily complete the solution of continuity in a bone already weakened by a torus fracture. If deformity is present, this, of course, should be corrected. It may be necessary to complete the fracture as the deformity tends to recur because of the elasticity of the bones in childhood. A well padded posterior splint or preferably a posterior plaster mold should be applied for a period of two or three weeks. This, of course, may and should be removed at frequent intervals for physical therapy.

In the past three years I have collected a series of seventy-five selected cases of torus fractures. Complete fractures of one or both bones are not included in this group even though visible cortex torus was present. That is, cases are not included in which, in addition to a longitudinal compression, there has been sufficient flexion, torsion or wrenching to complete the fracture.

Of these seventy-five cases forty-four occurred in boys and thirty-one in girls. The age incidence varied from 3 to 15 years, the average being 10.5 years.

The radius alone was fractured in fifty-three cases and both bones were fractured in twenty-two. In no case was the ulna alone fractured.

The fracture site varied from $\frac{1}{2}$ to $1\frac{1}{2}$ inches above the wrist, the average being $1\frac{1}{4}$ inches. This is in all cases relatively and in most cases actually higher than

the site of classic fracture in adults, which usually is three-fourths inch above the wrist.

An interesting observation, and one that I am unable to explain, is the difference in the observations made in the two sexes, in forty-one of the forty-four boys the greatest torus was on the posterior surface and the displacement, if present, was a posterior tilting of the distal fragment (fig 1). In only three cases was the reverse or the greatest torus seen on the anterior surface, and the displacement, if present, was an anterior tilting of the distal fragment (fig 2).

On the other hand, of the thirty-one fractures in girls, in only fourteen was the greatest torus on the posterior surface and the displacement, if present, was a posterior tilting of the distal fragment (fig 1). In seventeen cases the greatest torus was on the anterior surface and the displacement, if present, was an anterior tilting of the distal fragment (fig 2).



Fig. 2.—Torus fractures of both bones with slight anterior tilting of the distal fragments

SUMMARY

- 1 Torus fractures of the forearm are of importance because of their extreme frequency
- 2 The fracture site is always relatively and in most cases actually higher than the site of classic fracture in adults
- 3 In boys, the greatest torus is practically always on the posterior surface and the displacement, if any, is a posterior tilting of the distal fragment
- 4 In girls the incidence of the two types is nearly equal

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ABSTRACT OF DISCUSSION

DR. PAUL C. HODGES, Chicago: Dr. Gillies probably had to pick the most gross lesions in order to be able to demonstrate them on lantern slides. I suppose that he sees many cases in which the changes are so slight that they are overlooked unless one examines his films carefully. Dr. Walter Sullivan of the department of anatomy, University of Wisconsin, makes bromide enlargements of roentgenograms of bone and by this means is able to see a surprising amount of the detail

of the cancellous structure. To some extent, of course the use of a reading glass for the direct examination of the original films accomplishes the same purpose, but I believe that Dr Sullivan's method is even better and that it might be applicable to the study of clinical roentgenograms, in a condition like the one that has just been presented. The pelvic fractures occurring in the osteomalacia of child-bearing women bear some resemblance to torus fractures, because in that condition the bones have certain features in common with the bones of very young children. Such fractures are so different from the ordinary fracture of adult bone that they are sometimes described as crumpling rather than fracture. When Dr Hollis E. Potter makes roentgenograms of a wrist, he makes a number of views on each film, as a routine, including only a small part of the extremity but turning it into a variety of positions. He can do this, of course, only when he has definite information sent to him by the referring physician or obtained by his own physical examination, but when such information is available it is not necessary to make large general purpose views. A technic of this sort ought to be valuable when one suspects a torus fracture that might show up only in a particularly fortunate arrangement of bone in relation to tube and film.

OSTEOTOMY FOR FLEXION DEFORMITY AT THE HIP DUE TO ANTERIOR POLIOMYELITIS

EDWIN W. RYERSON, M.D.
CHICAGO

Contracture of the hip in flexion and abduction is a common deformity in cases of infantile paralysis. The resulting disability is so severe and so difficult to relieve that open operation is always necessary in cases of long duration. It is with regard to the operative technic that this paper has been written.

The contracture is caused primarily by a shortening of the tensor fasciae femoris, but in the course of time

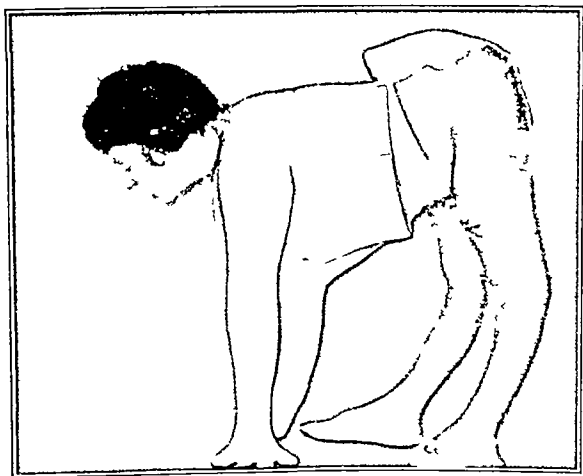


Fig. 1—Method of locomotion for eighteen years

the gluteus medius, the iliopsoas and the rectus femoris become shortened, as do even the iliofemoral ligament and the capsule.

As in most poliomyelitic deformities prevention is less difficult than cure. While the child lies in bed during the early stages of the attack of infantile paralysis, the easy and comfortable position is with the

thighs widely abducted and the knees flexed. This is the worst possible position, because it allows the tensor fasciae latae and the thigh flexors to become contracted, and by reason of the very short leverage afforded by the pelvis, it is practically impossible to correct the deformity by conservative measures when it has once become established. If, however, the legs are held parallel in the beginning, by plaster casts or by pinning towels around the legs, the contracture may ordinarily be prevented.

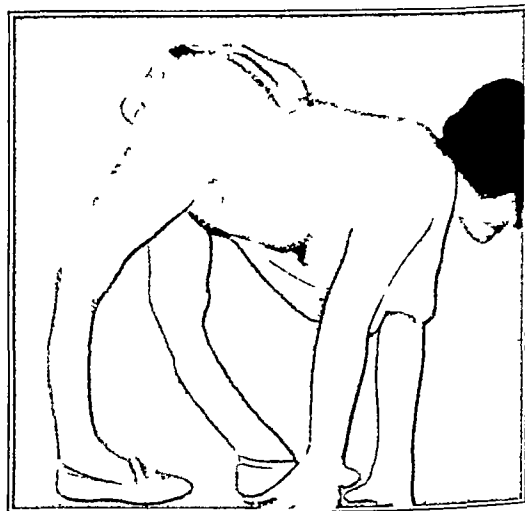


Fig. 2—Another view of patient in locomotion (enlarged from a 16 mm. moving picture film)

Considering now those patients with a severe and intractable deformity, what can be done for their relief? Traction in any form is useless, even when made in the line of deformity, with the leg elevated and the pelvis flat on the bed. Open division, by Soutter's method, is successful in young children, the tensor fasciae and the gluteus medius being peeled downward from the crest and from the anterior superior spine of the ilium but this operation requires a long and difficult after-treatment and sometimes causes considerable shock.

In older patients, Campbell's ingenious transference downward of the iliac crest and its externally attached muscles is very effective, but when, in addition, it includes division of the iliopsoas tendon, the capsule and the Y-ligament of Bigelow, it becomes questionable, in my opinion, whether or not such important structures should be sacrificed.

This problem presented itself in the following case.

A woman, aged 29, had a right-angled flexion contracture of both hips, bilateral genu recurvatum and equinovarus of the left foot. There was very little power in any muscles below the hips. For eighteen years she had been obliged to walk on all fours like a quadruped. Braces had been tried but could not be used successfully. She entered St. Luke's Hospital Nov. 23, 1931 and on November 25 the right iliac crest was displaced downward by Campbell's method but without dividing the iliopsoas or the capsule. Three weeks later a similar operation was done on the left hip. A considerable reduction of the deformity was attained but the thighs still remained flexed at an angle of 45 degrees in spite of heavy traction.

An oblique subtrochanteric osteotomy was performed six weeks later through a small incision and immediately the femur dropped readily into perfect correction. The postoperative discomfort was very much less than after the former procedure and the after-care was simple. A few weeks later the opposite femur was likewise divided, and, although the

position of the fractured surfaces was not quite so satisfactory, the result was equally good. The equinovarus of the left foot was corrected by a triple arthrodesis, at the time of the second osteotomy, with a tenodesis of the tibialis anticus tendon.

The patient was discharged from the hospital, Aug 18, 1932, walking fairly well with long braces and crutches. I examined her, June 8, 1933. She is able to walk well with the braces and crutches and does her own housework. The extreme lordosis of the lumbar spine has disappeared. She can advance both thighs strongly by the action of the iliopsoas muscles. It will be advisable, at some future time, to perform a bone-block at the knees, to correct the genu recurvatum, after which she may be able to walk without braces.

CONCLUSION

I believe that in the class of cases here discussed it is wise to displace downward the origins of the tensor fasciae latae and the gluteus medius muscles, and perhaps also to cut transversely the iliotibial band. If this does not produce sufficient correction, I believe that it is not wise to divide such important structures as the capsule of the hip joint and the iliopsoas muscle, and that it is distinctly preferable to perform an osteotomy in the upper portion of the femur, either at the same sitting or at a later date.

122 South Michigan Avenue

ABSTRACT OF DISCUSSION

DR J S SPEED, Memphis Tenn. With the average mild flexion contracture of the hip, the Soutter operation was satisfactory, but for these extreme flexion contractures of the hip it was insufficient and it was for just this type of case that the operation for the transference of the crest of the ilium was worked out by Dr Campbell. It has been possible to correct by this operation practically all even the extreme types of flexion contracture of the hip. I am in accord with Dr Ryerson regarding some type of bony

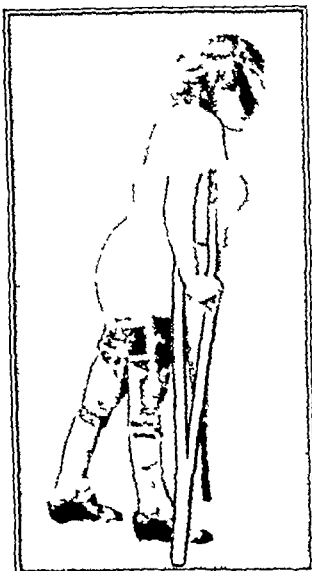


Fig. 1.—Patient using crutches and braces after operation.

operation in cases that cannot be corrected by operations on the soft parts alone. I believe that the more experience one has with the extensive soft tissue operations, the less necessity will be there for bony operations. In some cases, however, an osteotomy as described by Dr Ryerson is necessary. I have performed such osteotomies in several cases with most satisfactory results. The necessity for osteotomy, however, will be rare if a complete division is made of the contracted structures that prevent correction of the deformity. The structures that produce the greatest resistance are in their order the median head of the quadriceps muscle, the muscle attached to the anterior-inferior spine, the capsule of the hip joint, and the psoas muscle. The median head of the quadriceps muscle is attached to the anterior-inferior spine by a broad tendinous band which in cases of paralysis appears as a dense fibrous contraction band very resistant in nature. It is frequently better to do a tenotomy through the tendon just below the inferior spine rather than to attempt to strip it off from its attachments. It is occasionally necessary to divide the anterior capsule of the hip joint where one has not seen any instability or increased loss of function of the hip following this. I rarely ever find it necessary or advisable to divide the psoas muscle and advise against the division of this muscle for two reasons: first the psoas muscle is rarely ever paralyzed and being a living muscle can gradually be stretched; second

the psoas muscle is frequently one of the few active muscles left controlling the thigh. For this reason I do not wish to sacrifice its function if it can possibly be avoided. There is no question that the original Soutter operation, when it was being used to correct these severe deformities, was followed by a severe shock and in some cases death. I feel that the shock in these cases was due to too great a tension being placed on the undivided structures. The more extensively the contracted structures are divided surgically, the less tension and less shock following the operation. It is the tension and not the operative surgery that caused the bad results in such cases. I am in favor of a wide dissection and complete division of the contracted structures rather than a partial division with the resulting increased tension on the undivided structures when an attempt is made to correct the deformity.

DR JOHN O DIETERLE, Milwaukee. Dr Ryerson's procedure in doing a subtrochanteric or oblique intertrochanteric osteotomy in cases of this type is certainly very useful and will add to the correction of severe flexion deformities of the hip following poliomyelitis. A subtrochanteric or oblique osteotomy between the trochanters will most certainly facilitate the correction of these deformities. I recently had a case of severe abduction flexion deformity at the hip in a patient with arthritis. In this case, of course, an oblique osteotomy or subtrochanteric osteotomy is necessary before doing an operation on the soft parts. I first did the subtrochanteric osteotomy and then stripped down the soft tissues at the anterosuperior spine and in one operation was able to get a complete correction of the leg. I wish also to emphasize that the after-treatment in a case of this kind is much simplified. Every one knows the cumbersome and long drawn out treatment after the Soutter operation and the other stripping operations about the ilium. In this case I take it that Dr Ryerson simply applies a plaster spica and allows the repair to take place. I should like to ask Dr Ryerson a question on a point that I believe Dr Speed has already mentioned. After an oblique or subtrochanteric osteotomy isn't there some danger of pulling the upper end of the femur forward, displacing the fragments, and thereby endangering union at the upper end of the femur?

DR EDWIN W RYERSON, Chicago. The after-treatment following the muscle division has in my hands been extremely painful to the patient and has been so difficult in contrast to the after-treatment following the osteotomy that it has convinced me that if I were the patient I should much rather have a Soutter or partial Campbell operation and then the oblique osteotomy in the subtrochanteric region. This woman suffered greatly after the soft part operation and suffered practically none after the bone operation. The whole point of the paper is that if there are some good muscles and a good, strong capsule for the hip joint, I think it is not advisable to sacrifice a considerable part of the power of the remaining musculature and to a great extent of the capsule and Bigelow's ligament. There is not much deformity to be feared if the osteotomy is done high enough. If it is done a little too low there may be a good deal of deformity, and such was the case with this woman. The roentgenograms of the fracture taken afterward show a considerable malposition and yet she gets about perfectly well and is immensely relieved of her former deformity. The pull of these muscles after osteotomy is not very great and they do extremely well if one avoids interfering with the structure of the hip joint by dividing too much of the capsule. It is simply a suggestion and I think it may turn out to be worth while.

A Wider Point of View—Internists generally should take a broader view of their responsibilities in the study and treatment of disease than has become customary in recent years. Physicians of earlier times unsupported by specialization often exhibited a wider point of view and it is not an unmerited criticism of modern medicine to say that in delegating to specialists the entire management of conditions in which certain localized types of symptoms have arisen the physician not only neglects his proper duty to the patient but as similar experiences repeat themselves narrows his horizon of appreciation of the whole picture of disease.—Steele Alfred. *The Internist as His Own Psychiatrist*. *Ann Int Med* 7:281 (Sept) 1933.

THE IMMEDIATE TREATMENT OF COMPOUND FRACTURES

THE ALBEE BONE GRAFT AND THE WINNETT ORR METHOD OF POSTOPERATIVE CARE

H WINNETT ORR, M.D.
LINCOLN, NEB

A study of the literature reveals that, on a number of occasions, surgeons have suggested direct fixation of the fragments by wire, pins or screws, in compound fractures at the time of injury. It has been the experience of all, however, that patients so treated have not done well, and, generally speaking, both in the colleges and in the textbooks the teaching has been that such attempts should not be made.

In the more serious compound fractures in which there is loss of substance, especially in the larger bones, the usual plan has been either to amputate at once or to allow healing to occur after a long course of treatment of the soft part wound, without much consideration having been given to the result from the

tory in some cases but sometimes, on account of scarring or infection, good results from late plastic procedures could not be obtained.

Since the adoption of my method for the postoperative treatment of such patients by infrequent dressing much better results have been obtained. More rapid healing and with less scarring has been the rule, and subsequent bone graft procedures have been more successful accordingly. Several times during the past few years it has been possible to obtain much earlier satisfactory results. These have been accomplished by plastic bone procedures of various kinds and by manipulations for the correction of deformity performed during the course of healing of the infected wound. While this has been contrary to my previous custom the patient has gone on to good healing, and I have thus been able to obtain earlier and better results in such cases.

A formal primary Albee bone transplant at the time of an open infected fracture was not undertaken until recently. I felt that since I had been so successful in preventing postoperative infectious complications and healing had been obtained so regularly in the absence of the bone graft, a similar result might be obtained with a bone graft present. It was obvious also that the ultimate result in such a case, if successful, would mean a shortening of the patient's stay in the hospital and a reduction of many months in the disability period. Early healing of the wound and repair of the fracture in this way would also have the effect of avoiding secondary surgical procedures and the danger of other infectious and deformity complications. Accordingly, such a procedure was undertaken in the case to be described.

A young man was injured in an automobile collision on a highway about 400 miles from Lincoln, Oct. 21, 1932. He was carried to the nearest hospital, a few miles away, where it was found that he had a very severe compound fracture of the left leg just below the middle third. A fragment of the tibia about 2½ inches long was entirely missing. The large opening in the soft parts was sutured but could not be entirely closed. Even with the leg short and with some angular deformity there was still quite a large opening over the fracture area. (The plan of attempting to close the wound with sutures and of depending on a rubber tube for drainage is one of the commonest errors in this kind of emergency surgery.) Following the suturing, the leg was put into a plaster cast extending from the toes to just above the knee. There was considerable shortening and deformity. Thirty-six hours later the patient was brought in an ambulance 400 miles to Lincoln, arriving at about 8 o'clock in the morning, October 23. He was given 5 per cent dextrose solution intravenously and antitetanus and anti gas bacillus serum. He was then taken to the operating room about 10 o'clock and the first aid cast removed. The cast and all the dressings were badly saturated with blood and the patient was still in moderate shock.

On the fracture table a pin was put through the calcaneum, and the leg was brought down to a straight line and full length. An additional pin was also placed through the upper fragment of the tibia. Then the entire leg was prepared for open operation. Sutures in the skin were removed and the fracture area was examined. It was found that the fibula was now in correct length and position; there was a gap of about 2½ inches in the tibia. There was not enough skin and soft tissue to cover the fracture area. The entire fracture region was infected but it was felt that a long heavy slide bone graft

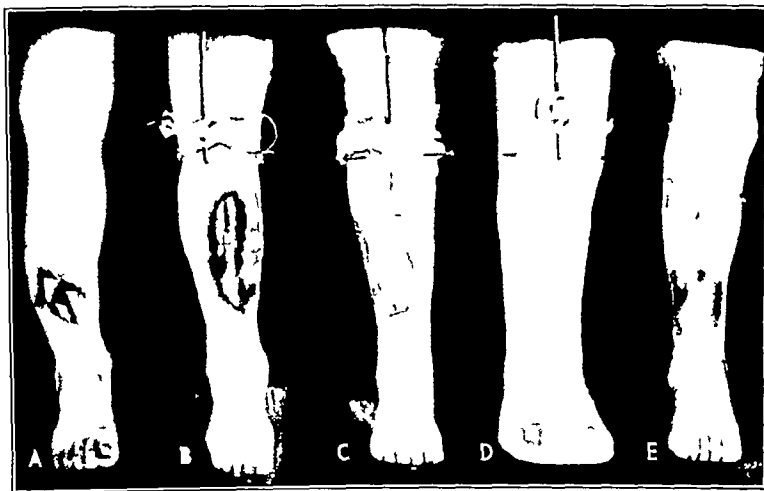


Fig. 1—An immediate Albee bone graft and the Winnett Orr method of postoperative care for a compound fracture of the leg with 2 inches loss of substance of the tibia. A, appearance of the leg thirty-six hours after injury (Oct. 22, 1932) on removal of the first cast and removal of the stitches used to close the original wound partially. B, the leg has been pulled down straight and to full length by traction on a pin through the heel. The knee is supported in correct position by a sling and a supporting pin put through the upper fragment of the tibia. The slide graft has been carried down across the defect in the tibia and fastened in place. C, with all the parts in good position the wound over the healthy bone is brought together with a single stitch at each end and the fracture area packed for open drainage with a nonantiseptic petrolatum pack. D, without any movement or change of length or position all the parts including the traction pins are included in the cast. E, condition at the time of the third dressing and change of cast. Wound practically healed and graft healing in. (This is from a photograph of soap models by Dr. Teal of Lincoln, Neb.)

standpoint of the fracture. There has usually been a shortened and deformed extremity to be treated secondarily by bone graft or by some other plastic procedure when that appeared to be feasible. In many prolonged cases with delayed healing of the wound and nonunion of the fracture, eventual amputation has been the final resort.

For many years it has been my practice to maintain all such injured extremities without regard to the amount of bone defect with the limb in the straight position and full length so that shortening and deformity could not occur during the period of wound healing. Later treatment by a bone transplant was satisfac-

from the upper fragment of the tibia might be brought across the bone defect and that it might contribute to the repair. Such a graft was obtained from the upper fragment. The lower end of the graft was driven into the medulla of the lower fragment. The upper end was fastened into the groove in the lower portion of the upper fragment by means of two chromic catgut sutures passed through drill holes. This gave considerable stability to the tibia as a whole. The extreme angles of the surgical wound were brought together with one stitch at each end, but the major portion of the wound was packed open with petrolatum gauze, as is customary in my method, and the entire limb placed in a plaster-of-paris closed cast. The pins in the calcaneum and in the upper fragment of the tibia were included in the cast to give fixed traction in correct length and position. The patient had no shock following the operation and was, indeed, in better condition and much more comfortable than at any time since his injury.

In this case there was a deviation from my usual routine which, for particular reasons, I desire to explain. On the fifth day following the operation Dr. Allen B. Kanavel of Chicago was in Lincoln and was seeing a number of my compound fracture and osteomyelitis cases. I was anxious to have him see the exact condition of this wound and graft at this particular stage. The patient was comfortable and free from fever, and it was felt that I might vary from my usual custom and expose the wound to afford Dr. Kanavel an opportunity to see the condition of the wound and the limb. An opening was made in the cast and the dressings lifted sufficiently for an inspection. The petrolatum pad and the other dressings were lifted up and then let down again without being changed, so that the original dressing remained in place until November 21, at which time the first formal dressing was done.

At the time of Dr. Kanavel's inspection the wound was observed to be clean, there was no evidence of inflammation or pus, there was a large healthy looking clot, and the leg was free from swelling or deformity.

At the time of dressing, November 21, there was a moderate amount of discharge, there was no odor, the wound and the graft were clean and appeared to be healing satisfactorily. The leg was somewhat loose in the cast, so that the packing about the middle portion of the leg and the fracture region was renewed and made tighter. The portion of the cast that was holding the pins in the heel and in the upper portions of the tibia was not disturbed, and there was consequently no loss of length or position.

The patient continued to progress satisfactorily after this time, and seven weeks after the original operation the entire cast was taken off, the traction and fixation pins were taken out, and a new cast was applied with a very thin layer of padding over the entire limb. There were no local or general inflammatory complications of any importance at any time. Even at this time there was sufficient bone repair so that the leg would support itself although the callus was still quite soft. A few days later he was permitted to go home for the Christmas holidays and since that time has spent only a few days in the hospital for two changes of cast and dressings. The accompanying roentgenograms were taken April 30. There has been some delay in the union of the lower end of the graft, which was intramedullary instead of cortical as at the upper end. This suggests that fixation into the cortex may be better in these cases. It is apparent that he is making an excellent recovery with a greatly shortened period of hospital care and disability.

CONCLUSION

This case demonstrates that such a program of treatment is feasible. A bone transplant may be put into an infected area and by suitable fixation immobilization and protection of the wound against mixed infection the patient may be carried through to healing of the wound and repair of the bone defect at the same time. This appears to demonstrate that the infectious complications to which one has been accustomed in most of these cases and which delay not only the healing of the soft part wound but also the repair of the fracture are due to mixed secondary infection incurred

by the patient in the course of secondary so-called antiseptic dressings. If the patient can be protected in the manner that I have suggested and approximately primary results can be obtained, a great saving in hospital expense, length of disability, and ultimate deformity may be made.

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ABSTRACT OF DISCUSSION

DR. EARL D. McBRIDE, Oklahoma City. To comprehend the success of Dr. Orr's method of treating infected wounds it is necessary to understand the role of the leukocyte and the granulating cell activity. The action is of two types: (1) the intracellular absorption and (2) the enzyme digestion through the splitting up of proteins, fats and carbohydrates into the albuminoses, peptones, and so on. In compound fractures the liberating of enzymes destroys infection. It may be called bacteriophage, as described by d'Herelle, or it may be considered



Fig. 2—Appearance of the fracture region in April, 1933. This was six months after injury and immediate bone graft operation. The upper end of the graft which was tied into the groove from which the graft was taken is soundly united by bony union. The lower end of the graft which was driven into the medulla of the lower fragment is uniting more slowly.

the cleavage of toxic products described by Jacoby, Wells and others. The popular war method of treating osteomyelitis and compound fracture was that of using the Carrel-Dakin technique of chemically removing the products of suppuration. This method does not fulfil the necessary biologic principles. To produce phagocytosis and enzyme digestion in a granulating wound, three local factors are essential: (1) constant and adequate drainage; (2) firm splinting of granulation; and (3) a constant degree of temperature. This is necessary and is greatly lacking in other forms of treatment. The application of a plaster cast maintains a constant temperature and favors production of cell products. It does not make any difference whether one is treating infected wounds or the osteomyelitis type or doing a bone graft operation in a compound fracture, the same processes take place.

DR. H. WINNETT ORR, Lincoln, Neb. Those who have employed the Orr method in osteomyelitis and in compound fractures realize that all they have been endeavoring to do is

to furnish conditions under which the patient has the best chance to recover. That is the main object of this method. The series of experiments with regard to bone repair that have been reported may contribute considerably to knowledge of the details of repair. The method devised by me in 1921-1922 and first reported in 1923 consists not only of infrequent dressings with aseptic (not antiseptic) petrolatum gauze pads but of an adequate drainage operation when required, immobilization to prevent trauma during and following operation and prolonged protection of the patient against irritative motion, muscle spasm, secondary wound infection and deformity. It is the combination of these factors and not the use of any one or two that constitutes the Orr method.

ARTERIOLES OF THE RETINA IN TOXEMIA OF PREGNANCY

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That retinitis occurs with some forms of toxemia of pregnancy is recognized. However the clinical significance of such retinitis is not well understood. There have been two main sources of difficulty in the interpretation of its relation to the underlying disease: (1) the varying terminology used by ophthalmologists to describe and designate the retinitis, and (2) the varying classifications of toxemia by obstetricians and clinicians. Although greater uniformity is being gradually attained in both of these phases, it is still hard to avoid the rather meaningless term albuminuric retinitis and it is still difficult immediately to classify individual cases of toxemia with absolute accuracy. It does not seem feasible at the present time to attempt to prove that retinal lesions occur exclusively in any one type of toxemia of pregnancy. It does seem, however, that the changes seen in the retinas of patients with toxemia are sufficiently constant to furnish if properly interpreted from the clinical standpoint valuable aid in the estimation of the patient's immediate and future course. I believe that clinical interpretation should be based primarily on the arterioles of the retina and only secondarily on the retinitis.

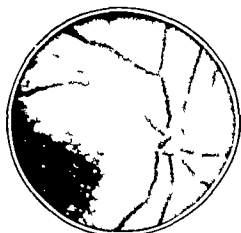


Fig. 1—Residual phase of retinitis of toxemia of pregnancy. Marked spastic and sclerotic narrowing of the arterioles is shown. Diffuse edema of the retina is still present.

as the completely developed picture of the retinitis. Cheney,² in 1924, stated that if a patient with toxemia has retinitis, the chances are four to one that she also has nephritis. He agreed with Schiotz,³ however, that retinitis does occur in cases of acute toxemia of pregnancy without evidence of preexisting nephritis and

that a few of these patients do not show evidence of residual nephritis after the subsidence of the toxemia. Neither Miller nor Cheney emphasized the significance of the vessels of the retina in their cases of retinitis although they both noted evidences of arterial constriction, and Cheney felt that the demonstration of actual arteriosclerosis in association with the retinitis justified the diagnosis of chronic nephritis.

Mylus,⁴ in 1928, demonstrated satisfactorily that in toxemia of pregnancy associated with a rise of blood



Fig. 2—Arterioles in a portion of the pectoralis major muscle removed at biopsy (same case as fig. 1). There are definite thickening of the walls of the arterioles, reduction in the size of the lumens, proliferation of the intima and hypertrophy of the media, reduced from a magnification of 415 diameters.

pressure the primary and most commonly observed lesions of the fundus were spasms and tonic constrictions of the retinal arteries. These occurred both in cases of acute toxemia and in cases in which chronic nephritis had existed previously. Mylius stated his belief that retinitis developed as the result of passive congestion in the venous capillary loops secondary to the tonic arterial constrictions.

If the retinas of pregnant women whose blood pressures are rising are examined systematically and frequently before the onset of disturbances of vision, the existence of the changes described by Mylius can not be doubted. His interpretation of the nature of these changes and of the mode of onset of the retinitis may be open to question, but his comprehensive reports of cases and photographs make further detailed description of the ophthalmoscopic appearance unnecessary. Suffice it to say that usually the first visible sign is a narrowing of the arterioles of the retina which may affect any or all of the branches of the central artery. This narrowing is often accompanied or followed by irregular constrictions of the lumen of the arterioles, usually first or most marked in the smaller nasal branches, which may vary in degree and situation from day to day. Later, as the narrowing and constrictions become more fixed, individual cotton-wool patches and hemorrhagic areas may appear in the retina, and, finally diffuse retinitis of the albuminuric type may develop.

If the patients who manifest arteriolar changes are receiving proper medical care, hemorrhages and cotton

From the Section on Ophthalmology, the Mayo Clinic. Work done in collaboration with the Section on Obstetrics. Read before the Section on Ophthalmology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.
1. Miller, J. R. The Relation of Albuminuric Retinitis to the Toxemias of Pregnancy. *Am. J. Obst.* 72: 253-269 (Aug.) 1915.
2. Cheney, R. C. The Toxemias of Pregnancy from an Ophthalmologic Standpoint. *J. A. M. A.* 53: 1383-1389 (Nov. 1) 1924.
3. Schiotz. Quoted by Cheney (footnote 2).

4. Mylius, Karl. Funktionelle Veränderungen am Gefässsystem der Netzhaut. Berlin: S. Karger, 1928.

wool patches will seldom occur, and, perhaps, diffuse retinitis should never be allowed to develop before delivery. Except in the presence of diffuse retinitis, these patients have little if any disturbance of vision. With the exception of the retinal detachments from subretinal exudation, all the so-called types of retinitis are only phases and extensions of primary lesions of the arterioles.

The variability of the narrowings and constrictions and their usual tendency to rapid disappearance after the termination of the toxemia certainly suggest that they are the visible signs of an angiospastic rather than an angiosclerotic lesion. The apparent permanence of some of the vascular changes indicates, however, that at some stage of the spastic process actual organic changes occur. Ophthalmoscopically, it is often difficult to determine just when the organic stage sets in. It has seemed probable that constrictions and irregularities which are still present two weeks after delivery are sclerotic and no longer simply spastic. Recent histologic studies of the arterioles in sections of peripheral muscle tissue obtained at biopsy suggest that organic changes in the intima occur early in the vasospastic phase of the toxemia and may be present from the onset.

Unless Volhard's⁵ or Mjhus' view of the pathogenesis of the retinitis in these cases is accepted, it would seem rational to assume that organic vascular changes are present when retinitis develops. The more accepted idea that organic arteriolar lesions form the basis of the vascular types of retinitis is summarized and supported by Friedenwald.⁶ "The vessels primarily affected are the terminal or precapillary arterioles, and the retinal lesions are in essence minute foci of necrosis oedema, and hemorrhage dependent on vascular occlusion." He stated that this basic vascular occlusion is organic and not spastic, and that it is due to "an acute necrosis of the vessel wall with total disappearance of all cellular outlines and the replacement of the tissues by an amorphous protein coagulum." From the purely clinical standpoint, however, although it is evident that permanent arteriosclerosis remains as a residue in most cases of diffuse retinitis of toxemia of pregnancy, it is also true that, in some cases especially when the retinitis is localized rather than diffuse, any permanent residual arteriosclerosis is so slight as to be clinically negligible. It seems possible therefore that mild retinitis can develop in the vasospastic phase of the toxemia before organic changes occur of sufficient degree to be irreparable. In most cases of severe diffuse retinitis, however, definite organic vascular changes are the inevitable residue.

It is obvious then, that with few exceptions the primary lesion in the retinas of patients with hypertensive toxemia of pregnancy is in the arterioles. Hemorrhagic edematous or exudative areas develop secondary to these arteriolar changes as a result of interference with the nutrition of the retina. Clinically, at least all the ophthalmoscopically visible branches of the central artery of the retina are best considered as arterioles. That is it has been shown in the usual types of cardiovascular renal disease that disease of the arterial branches of the retina is a part of a diffuse disease of the arteriolar rather than of the arterial

system and that, in the main, the type and severity of the involvement of the systemic arterioles closely approximate the type and severity of the lesions visible in the retinal arterioles. This fact is now rather generally accepted in the interpretation of primary or essential hypertension. In glomerulonephritis, it seems probable, conservatively, that although the factors of generalized edema and anemia may play a part in the causation of the associated retinitis, lesions of the retinal arterioles and a vascular type of retinitis do not develop until diffuse arteriolar spasm or sclerosis occurs as a secondary or complicating factor to the primary nephritis. Because of this, it is not always possible for the ophthalmoscopist to distinguish between the retinitis of primary hypertension and that of primary glomerulonephritis unless he is assisted by the recognition of the additional factors of edema and anemia in the retinal picture. He can always, however, unless the vessels are too greatly masked by edema, give a valuable estimate of the degree of associated arteriolar spasm and sclerosis. It seems justifiable to assume that in the toxemia of pregnancy, likewise, the presence of lesions in the retinal arterioles is an indication of involvement of the systemic and renal arterioles of similar type and severity, and that the development of retinitis indicates the approaching onset of organic injury to the retinal, systemic and renal arterioles which will be, in part at least, irreparable. This is of particular significance with reference to the future well being of the mother, since it is probable that hypertension will persist in the presence of diffuse generalized arteriosclerosis. Although the occurrence of retinitis does not justify the diagnosis of glomerulonephritis, it obviously indicates the probability of serious involvement of the renal arterioles along with the systemic arterioles and the probable persistence after pregnancy of a low reserve, or an arteriosclerotic kidney. Interpreted in this way, it seems clear that in toxemia of pregnancy every effort should be made to terminate the toxemia, even by the interruption of pregnancy, before the development of diffuse retinitis. Thus, ophthalmoscopic examinations should be made at frequent intervals without reference to the absence of disturbances of vision, especially if the patient has a rapidly rising blood pressure and angiospastic changes are present. As long as the lesions in the arterioles are definitely spastic, if the condition of the patient is otherwise satisfactory, it is safe to temporize. The appearance of individual cotton-wool patches and hemorrhagic areas gives warning of the near approach of permanent organic changes in the arterioles. If these lesions increase in number from day to day, pregnancy must as a rule be terminated if the future integrity of the systemic and renal arterioles, as well as of the retinal arterioles, is to be preserved. It is true that permanent organic lesions, although usually of less severe degree, develop at times in the arterioles as a sequel to the spastic changes in cases in which retinitis has not developed. At present, it does not seem possible to determine accurately the transition point, but the ophthalmologist can sometimes indicate his belief that organic changes are at least impending even in the absence of retinitis.

As yet no exact means have been devised for determining the presence and degree of generalized arteriosclerosis. Histologic study of the arterioles in a portion of peripheral muscle obtained by biopsy furnishes valuable information but such information is

⁵ Volhard. Die Pathogenese der Retinitis albuminurica. *Zentralbl. f. d. ges. Ophth.* 21: 1-9 (1896) (March 5, 1920).
⁶ Friedenwald, I. S. The Pathogenesis of All Immune Retinitis. In: 25th Anniversary Volume. New York, International Press, 1952, vol. 2, p. 451.

not available in all cases. It is rather generally assumed that elevation of the blood pressure, especially of the diastolic pressure, is a sign of generalized narrowing or sclerosis of the arterioles throughout the body, and that a persistently high diastolic pressure indicates actual arteriolosclerosis. Even in cases of glomerulonephritis, the associated hypertension is probably best explained on the basis of generalized narrowing or sclerosis of the systemic arterioles. A definite relationship can be demonstrated between the changes in the retinal arterioles observed during hypertensive toxemia of pregnancy and the tendency to persistence of the hypertension after the termination of pregnancy.

From the standpoint of hypertension only, two main types of pregnancy must be considered: those in which hypertension has been known to exist prior to the onset of pregnancy, and those in which the blood pressure rises acutely from levels which were normal before pregnancy and during the early months. In a certain percentage of the first type, although the blood pressure may rise slightly during the latter months of pregnancy, toxic symptoms do not develop, and any changes in the fundus are of the organic arteriolar type. After the termination of pregnancy, the blood pressure returns rapidly to its previous level. In other cases of this type, however, the blood pressure rises coincidently with the appearance of symptoms of toxemia, and spastic arteriolar changes and retinitis can appear primarily or be superimposed on previous organic arteriolar lesions. The course of these lesions is essentially the same as those appearing in cases of the second type in which blood pressure has been normal previously. The lesions can disappear without residue or they can be followed by organic arteriolar changes, or by an increase of the organic changes already present. In some cases there is a definite tendency to recurrence of toxemia in succeeding pregnancies. The blood pressure may or may not be elevated between pregnancies.

TABLE 1—*Acute Toxemia Without Previous Hypertension*

Retinal Lesion	Cases	Toxemia Without Convulsions		Toxemia With Convulsions		Recurrent Toxemia	
		Residual Hypertension	No Residual Hypertension	Residual Hypertension	No Residual Hypertension	Residual Hypertension	No Residual Hypertension
Normal fundi	12		9				
Arteriolar spasms only	10	1	11				6
Arteriolar sclerosis with added spasms	2					2	
Arteriolar spasms with residual sclerosis	3	2	1				
Arteriolar spasms with localized retinitis	4	1	3				
Arteriolar spasms with localized retinitis and residual sclerosis	3	2				1	
Arteriolar spasms with diffuse retinitis	1	1					
Arteriolar spasms with diffuse retinitis and residual sclerosis	6	3		3			
Total	50	10	24	3	4	3	6

The data in tables 1 and 2 indicate that the probability of the persistence of hypertension after the termination of pregnancy is definitely related to the development of organic changes in the retinal arterioles. After delivery the blood pressure returned rapidly to normal in all cases in which the arterioles of the retina had been normal throughout the toxemia. Of twenty-eight cases in which the arterioles returned to normal

after the subsidence of the spastic phase, persistent hypertension followed pregnancy in only two. In sixteen cases in which residual sclerosis of the retinal arterioles was present after the subsidence of the spastic phase, persistent hypertension was present in fifteen. Sclerosis of the arterioles is an almost constant residue of diffuse retinitis, it failed to appear in only one of

TABLE 2—*Hypertension Previous to Pregnancy*

Retinal Lesion	Cases	Without Toxemia		With Toxemia	
		Return to Previous Blood Pressure	Residual Increased Blood Pressure	Return to Previous Blood Pressure	Residual Increased Blood Pressure
Normal fundi	8	6			
Arteriolar sclerosis only	10	4	2	4	
Arteriolar spasms only	2			2	
Arteriolar spasms with localized retinitis and residual sclerosis	1				1
Arteriolar sclerosis with added spasms	2			2	
Arteriolar sclerosis with added spasms, diffuse retinitis and residual increased sclerosis	1				1
Total	24	12	2	8	2

eight cases. It is not so constant a residue of localized retinitis, it failed to appear in four of eight cases. Spastic arteriolar lesions occurred in 60 per cent of cases of toxemia in which hypertension had been present previous to pregnancy, in 73 per cent of acute toxemia without convulsions, in 70 per cent of acute toxemia with convulsions, and in 90 per cent of recurrent toxemia. By contrast, it may be noted that retinitis occurred in 20 per cent of cases of toxemia with previous hypertension, in 30 per cent of acute toxemia without convulsions, in 40 per cent of acute toxemia with convulsions and in only 10 per cent of recurrent toxemia. This relative infrequency of retinitis in cases of recurrent toxemia is recognized, but has not been definitely explained. Hypertension remained permanent in five of eight cases of localized retinitis and in eight cases in which diffuse retinitis was present during pregnancy. The serious nature of the residual injury to the vascular system of a patient with toxemia of pregnancy and diffuse retinitis is well illustrated by the following case.

REPORT OF CASE

A woman aged 41, was admitted to the hospital in the seventh month of her eighth pregnancy. The preceding seven pregnancies had been normal so far as she knew. For about ten days before admission she had severe abdominal pains and marked blurring of vision. The blood pressure had not been taken but on admission it was 250 systolic and 160 diastolic in millimeters of mercury. The urine contained albumin graded 3 and many casts. The concentration of urea was 40 mg for each 100 cc of blood. Extensive diffuse retinitis of the angiospastic (albuminuric) type was present in each eye. The patient was delivered five days later. The blood pressure did not fall rapidly after delivery, and was 242 systolic and 142 diastolic at the end of two months. After four months the systolic blood pressure was 172 and the diastolic 120. Ophthalmoscopic examination at this time revealed sclerosis graded 3 of the retinal arterioles with residue of the acute retinitis. Sixteen months after the termination of pregnancy the systolic blood pressure was 180 and the diastolic 130 and ophthalmoscopic examination revealed sclerosis graded 3 of the retinal arterioles with only the scars of previous retinitis and no signs of activity. The appearance of the retina did not change much after this although a few small hemor-

rhagic areas appeared in the retina from time to time. Three years later, the patient returned to the clinic with left hemiplegia and left homonymous hemianopia, apparently the result of cerebral hemorrhage or thrombosis. The systolic blood pressure at this time was 170 and the diastolic 110. Urinalysis gave negative results except for the presence of albumin graded 1. The concentration of urea was 10 mg for each 100 cc of blood. At the end of three years the systolic blood pressure was 186 and the diastolic 130, and one year later the patient died as the result of a second cerebral vascular accident. Necropsy revealed hypertrophy of the heart (548 Gm compared with the normal of 300 Gm for a person of corresponding height and weight), multiple old and fresh cerebral hemorrhages, and generalized arteriosclerosis graded 2 with arteriosclerotic changes graded 1 in the kidney. The glomeruli were well preserved.

In this case, then, following acute toxemia of pregnancy which did not progress to the stage of eclamptic convulsions but which was complicated by the presence of diffuse angiospastic retinitis, severe hypertensive dis-

of origin of the edema, which is largely subretinal. It is questionable whether the edema is to be regarded as part of the general edema present in such cases, or whether it is the result of spastic changes in the choroidal arterioles. As Friedenwald pointed out, changes in the choroidal arterial circulation are not so closely linked to those in the systemic arteries and arterioles as are lesions in the retinal arterioles. This probably explains the absence of persistent hypertension in these cases of retinal detachment.

In two cases in the clinic, extensive bilateral detachments of the retina occurred a few days before delivery, associated in each case with a moderate rise of blood pressure and moderate generalized edema. One of the patients had eclamptic convulsions. Both patients had normal blood pressures within a month after delivery, the pressure of one patient was 114 systolic and 72 diastolic six months afterward. The other patient has had two subsequent normal pregnancies. Her blood

TABLE 3—*Relationship Between Retinal Changes and Persistent Hypertension*

Case	Toxemia	Before Delivery			Two Weeks After Delivery			Six Months or More After Delivery			Comment
		Retina	Blood Pressure		Retina	Blood Pressure		Retina	Blood Pressure		
			Sys tolic	Dias tolic		Sys tolic	Dias tolic		Sys tolic	Dias tolic	
1	Acute no convulsions	Arteriolar spasm	182	124	Spasms relaxed	120	80		118	70	
2	Acute no convulsions	Arteriolar spasms localized retinitis	180	110	Retinitis subsiding questionable residual sclerosis	110	70	Arteries mildly narrowed no definite sclerosis	112 142	90 88	
3	Acute no convulsions	Diffuse retinitis	260	160	Diffuse retinitis	184	106	Sclerosis graded 3	180	130	Died 8 years later necropsy multiple cerebral hemorrhages hypertrophied heart arterio sclerosis
4	Acute convulsions	Arteriolar spasms	170	110	Normal	120	88		110	70	
5	Acute convulsions	Arteriolar spasms localized retinitis	178	122	Retinitis subsiding residual sclerosis	146	100				Cerebral vascular accident in hospital after delivery
6	Acute convulsions	Bilateral detachment	192	120	Retinas reattached pigment changes	120	72	Pigment residue	114	72	
7	Acute previous hypertension	Arteriolar spasms hemorrhages	180	100	Spasms relaxing, hemorrhages absorbed	130	90	Normal	144	92	Systolic 180 diastolic 95 fundi normal 3 years before pregnancy
8	Acute previous hypertension	Arteriolar spasms diffuse retinitis	260	180	Retinitis still active	200	130	Sclerosis graded 3 residue of retinitis	178	110	Systolic 142 diastolic 100 1 year before pregnancy 6 years later systolic 230 diastolic 140 right hemiplegia sclerosis graded 3 with recurrent retinitis

case persisted and progressed in eight years to death as a result of the last of a series of cerebral hemorrhages. Even if the primary disease during pregnancy was glomerulonephritis, the end-result was diffuse arteriolar disease and it seems more probable that the primary lesion was also in the arterioles. Not all cases of this type run such a severe and steadily progressive course. However, it seems probable that the residual lesion in any case of toxemia of pregnancy complicated by retinitis will be at least partially arteriosclerotic. This statement does not hold true for the primary detachments of the retina occurring in association with the toxemia of pregnancy, since in these cases the underlying lesion probably is not in the retina or the retinal arterioles. In cases of eclampsia or preeclamptic toxemia in which detachment of the retina occurs without primary or preceding retinitis, the probability of residual permanent vascular disease seems to be distinctly less than in cases of diffuse retinitis of the angiospastic type. As suggested by Crowther and Hamilton¹ the choriocapillaris seems to be the source

pressure seven years after the toxemia and detachment was 120 systolic and 80 diastolic. A third patient had a similar type of subretinal edema without lesions in the retina or retinal arterioles. Her blood pressure returned to normal within three weeks. She had two normal pregnancies subsequently but in the fourth pregnancy hypertension with spastic changes in the retinal arterioles and mild retinitis developed. Two months after the termination of this pregnancy, the retinal arterioles were sclerotic, graded 1, and the blood pressure was 130 systolic and 95 diastolic.

The histories of cases summarized in table 3 illustrate the future course in cases in which varying types of retinal lesions were present in association with hypertension during pregnancy.

CONCLUSIONS

1 Spastic lesions of the arterioles are the most frequent and usually the primary signs of retinal involvement in toxemia of pregnancy.

2 The spastic lesions occur both in acute toxemia and in toxemia superimposed on previous vascular or renal disease.

¹ Crowther W. L. and Hamilton I. B. Eclampsia with Amaurosis Due to Detachment of the Retina. *M. J. Australia* 1: 171-178 (Aug. 6) 1932.

3 Spastic lesions occur in about 70 per cent of cases of toxemia

4 In about 60 per cent of cases, the spastic lesions disappear with the termination of pregnancy and the blood pressure returns to normal or to its previous level

5 In about 40 per cent of cases organic lesions develop in the arterioles, often in association with retinitis. In such cases, elevation of blood pressure usually persists

6 Diffuse retinitis of the albuminuric type is to be regarded as evidence of severe generalized arteriosclerosis rather than of primary nephritis

7 Primary detachment of the retina occurring in the course of acute toxemia does not have the same serious clinical significance as diffuse retinitis

ABSTRACT OF DISCUSSION

DR ROBERT J. MASTERS, Indianapolis. Not infrequently the eyeground picture is the deciding factor as to the immediate and subsequent management of a patient suffering with pregnancy toxemia. I agree with the author that the ophthalmoscopic observations of the greatest clinical importance are based on changes in the retinal arterioles. The occurrence of various degrees of pregnancy retinitis depends on the degree and duration of the primary retinal arteriolar changes. The appearance of the picture called pregnancy retinitis seems to follow no rule as the most severely toxic patients may have no retinal exudates or hemorrhages. Constriction of the retinal arterioles is constantly seen, however, in all patients whose blood pressure is elevated to 150 or more systolic and 100 or more diastolic. For the purpose of proving this arterial constriction by measurement, I have employed an ophthalmoscope that projects a linear graticule on the eyeground. The use of this instrument was suggested to me by Dr Wagener. Changes in the retinal arteries probably indicate, to a reasonable extent, changes in the arterioles of the rest of the body. Constriction of the retinal arteries therefore suggests a generalized arteriolar constriction sufficient to elevate the blood pressure. This arteriolar constriction is probably the result of irritation produced by a toxin circulating in the blood stream. If the toxic irritant is allowed to continue its action too long before pregnancy is terminated, its effect will advance from the stage of irritation with arteriolar constriction to a stage of destruction with sclerotic changes in the vessels, permanent vascular hypertension and chronic nephritis of various degrees of severity. This permanent damage I have seen, as noted by the author, in patients who have shown only a retinal arterial constriction, without retinitis during their acute toxemia. The possibility of arteriosclerosis, persistent vascular hypertension and chronic nephritis in young women requires more thought than does risk to their future vision. All the toxic patients whom I have studied at the maternity hospital of Indiana University have come through with useful vision, whereas almost three fourths have exhibited evidences of chronic nephritis following or complicated by toxemia and almost one third had sclerotic changes in the retinal arteries.

DR ARTHUR J. BEDELL, Albany, N. Y. When the retinal changes in pregnancy become fixed they are easily demonstrable, and when hypertension persists after delivery the systemic damage is irreparable. This is illustrated by the case of Mrs. S., aged 42, who was examined eight years after a cesarean section in the eighth month. She was blind four or five days before the operation. Her blood pressure has never returned to normal and the fundus picture clearly illustrates the marked changes in the retinal arteries and veins. In cases of well established hypertension one finds not only the wide spread arterial changes but also white, powder-like exudates as shown in S. P., a 38 year old woman who had toxemia and severe retinitis during the terminal stages of a pregnancy. Her tension remains elevated and her vision reduced. That any unrecognized or improperly treated toxemia of pregnancy is a serious condition is illustrated by the history of H., aged 30, who entered a hospital five weeks before the date of expected

delivery. Three weeks before that time she had had transitory attacks of almost complete blindness. She was allowed to continue to term, although her systolic pressure was 220 and her diastolic pressure high. For four and one half weeks she could not even recognize her attendants. The photographs taken ten months after delivery of her dead child show the intense degeneration of the retina, the markedly irregular artery lumen, and the atrophy of the disk. The vision was 10/200. Her pressure continues high, and not only has she lost much sight but her general vascular system has undergone a serious and permanent change. I trust that these signs will receive early recognition. For many years it has been known that blood vessel spasms were visible in the retina. They have been so elusive, however, that few photographs have portrayed them. As I understand Dr. Wagener, his plea is that ophthalmologists, when called on to render an opinion on the conditions found in the fundus of a pregnant woman suffering from toxemia, should urge and insist on the removal of the cause of the toxemia during the stage of arteriolar spasm, instead of waiting until the lesion becomes fixed. These photographs uphold his contention and should be an object lesson to all who are in doubt as to the imperative necessity for immediate delivery.

DR HENRY P. WAGENER, Rochester, Minn. I wish to thank Dr. Masters, and particularly to thank Dr. Bedell for the photographs which he has shown supplementing and far surpassing those I have shown and illustrating a point that I wished to demonstrate, namely, that definite organic changes follow spastic lesions in the arterioles. I might also reemphasize what Dr. Bedell said in closing, that when the ophthalmologist is called to see a case of toxemia of pregnancy he should focus his attention not only on the presence or absence of retinitis but particularly on the condition of the retinal vessels and that he should if possible advise delivery before the changes in the arterioles become organic. The obstetrician should realize that, if he will ask for ophthalmologic consultation in the early stages of the toxemia when the blood pressure begins to rise, there is a chance to discover these changes before the patient complains of blurring of vision.

LIMITS OF THE ANTI-INFECTIVE VALUE OF PROVITAMIN A (CAROTENE)

S. W. CLAUSEN, M.D.

WITH TECHNICAL ASSISTANCE OF AUGUSTA B.
McCOORD, B.A.
ROCHESTER, N. Y.

Investigations have indicated with a high degree of certainty that carotene may be converted in the liver to vitamin A. This fact makes possible a chemical approach to the problem of the anti-infective action of vitamin A. In the studies about to be reported, the carotinoid pigments of the blood were determined by the method of Connor.¹ The pigments determined by this method include carotene and xanthophyll. In order better to understand the results obtained the vitamin A content of the blood and of the liver in children coming to autopsy and in experimental animals was determined by a modification of the antimony trichloride test of Carr and Price.² The uncertainty of this method is recognized, but the results appear so consistent and the variations in different conditions are so large, that the method seems sufficient for our purpose. An arbitrary unit is employed. It is equal to about 0.01 Sherman unit.

Aided by a grant from the Rockefeller Research Fund.
From the Department of Pediatrics, University of Rochester School of Medicine and Dentistry, Rochester.
Read before the Section on Pediatrics at the Eighty Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.
¹ Connor, C. L. Studies on Lipochromes. The Quantitative Estimation of Carotene in Blood and Tissue. *J. Biol. Chem.* 77: 619, 1918.
² Price, E. A. and Carr, F. H. Colour Reactions Attributed to Vitamin A. *Biochem. J.* 20: 497, 1926.

The so-called anti-infective value of carotene may be studied in two ways (1) By observing the effects of administering this substance over a prolonged period in a group of children, and comparing the results with those in a control group. One objection to this method is the fact that many older children habitually choose a diet rich in carotene. If this habit were not known in individual cases, it would introduce a complicating factor. (2) By observing the level of plasma carotinoids in a large group of persons, and correlating these levels with the known susceptibility of the children to repeated respiratory infection. The latter method was selected. Before presenting the results of this study, it is necessary to discuss various factors which affect the level of plasma carotinoids.

When carrot puree, $\frac{1}{2}$ ounce, twice a day, is administered to healthy infants, a rise of the level of carotinoid pigments of the blood usually follows. The carotene

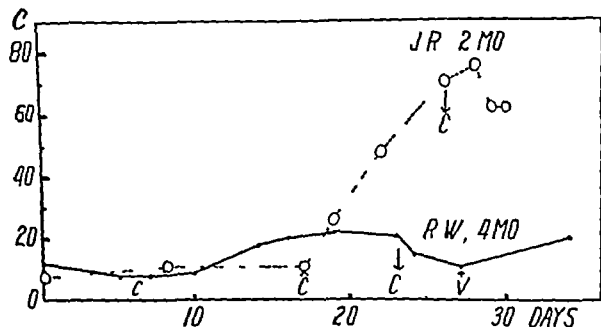


Chart 1—Rise of the level of plasma carotinoids caused by adding carrot puree to an infant's diet at the points indicated by \uparrow C. The figure shows good absorption in the case of J R and poor absorption in the case of R W.

content of the plasma has been expressed in units of thousandths of a milligram per hundred cubic centimeters, i. e., 1 unit is equivalent to 1 gamma per cent. In J R, aged 2 months (chart 1), the level of plasma carotinoids steadily rose from 10 to 76 units in nine

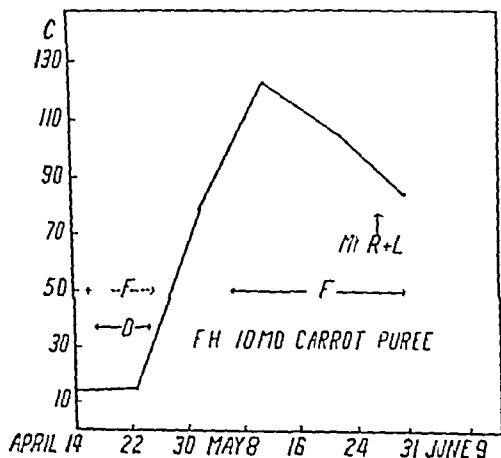


Chart 2—Poor absorption of carotinoids during fever (F) and diarrhea (D). Absence of protection against respiratory infection (myringotomy indicated by M). This child later on required mastoid operation.

days. The rise continued for two days after carrot puree had been discontinued. R W, 4 months old, received the same quantity of carrots but showed a rise in the level of plasma carotinoids of only 11 units. Children with diarrhea, fever, or both show little rise. F H, 10 months old (chart 2), received carrot puree

for two months, during a period of fever and diarrhea, the level of plasma carotinoids remained low, during and after recovery, a rapid rise ensued, then fever recurred, with a fall in the level. Otitis media and mastoiditis finally developed.

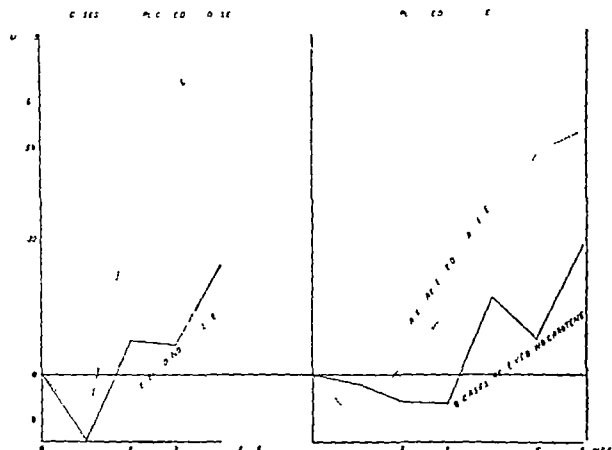


Chart 3—Curves showing the level of carotinoids due to the absorption of carotene from a solution of carotene in oil given by mouth during the course of scarlet fever. The absorption is better in the absence of complications.

Carotene in oil (1:2,000) was administered to a number of patients with scarlet fever throughout the illness. The average level of plasma carotinoids is shown in chart 3. Here again, the slow rise during fever is obvious. It is therefore apparent that prepara-

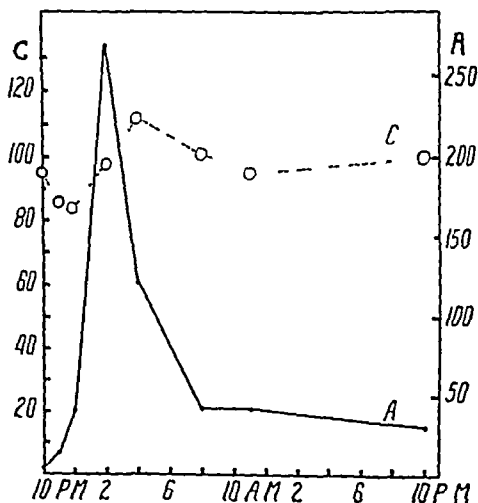


Chart 4—A comparison of the rates of absorption of carotene and of vitamin A after the ingestion of 10 cc of carotene in oil 1:2,000 and 2 cc of halibut liver oil showing more rapid absorption of vitamin A.

tions of carotene may be poorly absorbed under certain conditions.

Vitamin A is much more readily absorbed from the intestinal tract of children than is carotene, after a dose of 2 cc of halibut liver oil plasma, the level may rise from 15 to 270 arbitrary units at the end of four hours (chart 4). It is therefore obvious that, under certain conditions halibut liver (or cod liver) oil may be superior to carotene. However we have observed that in chronic diarrheas and in celiac disease even during

2a. The vitamin A potency is about 7,000 units per gram halibut liver oil plasma now being used on the market contains 37,000 vitamin A units per gram.

periods free of diarrhea the absorption of vitamin A is slight

It was found that infants who have not received vegetables, egg yolk or top milk mixtures never have a high level of plasma carotinoids. After the age of 2 years, however, the average level of plasma carotinoids of healthy children is nearly constant at about 80 units. There is a slight rise in summer. Children with infections, however, show a marked lowering, which in general corresponds with the severity of the infection. In chart 5, the rectangles indicate the range of plasma

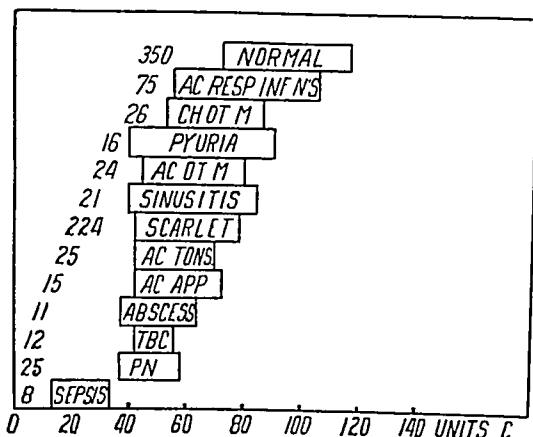


Chart 5—Plasma carotinoids in various infections. The rectangles represent the range covered by the median half of the cases studied. The numbers to the left represent the total number of cases. Normal children, acute respiratory infections, chronic otitis media, pyuria, acute otitis media, sinusitis, scarlet fever, acute tonsillitis, acute appendicitis, abscess (various locations), active pulmonary tuberculosis, pneumonia, septicemia.

carotinoids within which fell the median half of cases of various conditions, the figures to the left of the rectangles show the total number of cases of each condition. From what has already been said, it will be evident that a low level of carotinoids cannot be considered as preceding, or predisposing, to the infections, but rather, as a consequence of the infection. This lowering may be due to any of three causes: (1) more rapid utilization in fever, (2) slower absorption and (3) poor appetite. The rate at which the level of plasma carotinoids falls when healthy children receive a carotene-free diet is only slightly slower than the rate of fall during the first week of scarlet fever, in patients on the same diet (chart 6). This would indicate that poor appetite and poor absorption during fever account for the observed lowering of the level of carotinoids. If, therefore, we wish to study the relationship between plasma carotinoids and resistance to infection, we must consider children healthy when examined. It is possible to show that the level of carotinoids in a child is fairly constant, lowering occurs during an infection, a return to the individual level takes place within about ten days after fever disappears. We have studied 1,322 children over the age of 2 years. We have grouped together those children whose carotinoid level fall within ranges of 20 units, in each group, the percentage of children subject to repeated respiratory infection has been recorded. This information has been taken from the clinical record. As may be seen from table 1, the apparent susceptibility to repeated respiratory infection falls with a rise in the level of carotinoids, until a value of about 120 units is reached. Thereafter, the susceptibility rises. We have also recorded in this table the results in children with mild and with severe infections. As already stated, a marked fall is noted during infec-

tion. Nevertheless, it is apparent that there exists an intermediate range of values for plasma carotinoids, within which the susceptibility to repeated respiratory infection is lower than in the higher or lower ranges.

TABLE 1—Correlation of the Level of Plasma Carotinoids with a History of Repeated Respiratory Infections

Units Carotene	At Time of Examination								
	No Infection			Moderate Infection			Severe Infection		
	Total Num ber	Subj ect to Infection Num ber	Per Cent	Total Num ber	Subj ect to Infection Num ber	Per Cent	Total Num ber	Subj ect to Infection Num ber	Per Cent
Low									
0-20	2	1	50	4	1	25	9	6	67
40	16	7	44	42	17	41	42	11	26
60	107	37	34.5	165	70	42	32	15	47
80	141	49	33.5	130	44	31	5	0	0
Middle									
100	172	45	26.7	86	18	21	1	0	0
120	102	21	20.6	45	17	38			
140	67	15	22.4	21	6	29			
High									
160	38	11	29	3	0	0			
180	22	10	45	3	0	0			
200	14	7	50	3	2	67			
220	8	1	13	1	1	100			
240	3	3	100	0	0	0			
260	2	0	0	1	1	100			
Summary									
Low	301	104	34.5	211	88	41.5	9	6	67
Middle	341	81	23.7	215	62	28.7	42	11	26
High	87	32	37	77	27	34.8	38	17	44
Total	729	217	29.6	504	177	35.1	89	34	38.2

If it be assumed for argument that a low level of plasma carotinoids predispose to repeated respiratory infection, the importance of this factor is not great. Not more than from 5 to 10 per cent of this susceptibility in the children studied can be attributed to a low

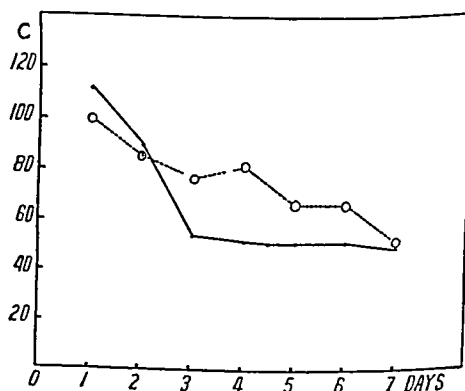


Chart 6—Rate of fall of the level of plasma carotinoids in scarlet fever and in children consuming diet low in carotene.

level of carotinoids.³ The increased susceptibility among children with a high level of carotinoids suggests a possible injurious action of carotene, at least, it would indicate caution in the use of concentrated preparations in certain persons. We have gained the

³ Clausen, S. W. The Exploitation of the Vitamins. New York State M. J. to be published.

impression that children with xanthosis cutis⁴ are rather susceptible to respiratory infection.

Our own data on the administration of carotene are limited to a study of seventy-five cases of scarlet fever. We have found that the administration of carotene in oil (from 5 to 10 cc of 1:2,000 in Mazola oil [corn oil], once a day) to half of these children throughout their illness and convalescence had no demonstrable beneficial effect on fever or complications.⁵

We believe that the absence of benefit from the use of carotene and the absence of any striking correlation

between the level of plasma carotinoids and the susceptibility to repeated infections may be explained in one of two ways.

The supply of vitamin A in the liver in our cases may have been entirely adequate for protection, or, vitamin A may be of little importance as an anti-infective agent in the age-group considered. Some evidence on these points may be gained by analyses of blood and of liver for vitamin A. The normal level of vitamin A in the blood of rats—from 15 to 25 units—is independent of the quantity stored in the liver (chart 7).⁵ Moreover, the level in the

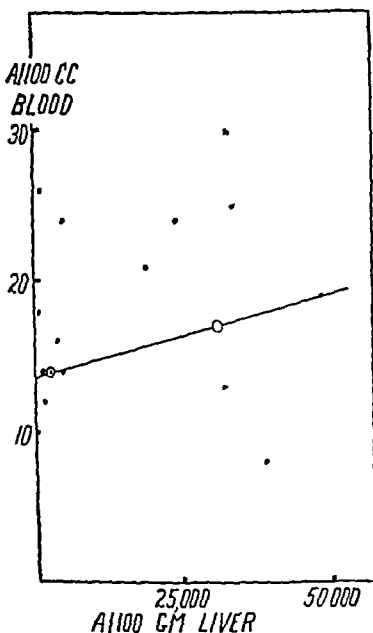


Chart 7—Lack of correlation between the level of vitamin A in blood and in liver.

blood is subject to wide variations, as may be shown by feeding experiments. Consequently, the vitamin A level in the blood is no criterion of the quantity stored. For any proper understanding of our problem, we must ascertain the amount in the liver. Miss A. B. McCoord and Dr. E. L. Clausen have found that in the rat the liver may store quantities greatly in excess of those necessary to prevent symptoms of deficiency; in animals suffering from symptoms of deficiency, the content was found to vary from 0 to 40 arbitrary units per hundred grams, animals on the Sherman B diet from the age of 4 to the age of 8 weeks had no signs of deficiency of vitamin A, although the A of the liver was only 300 units, at 17 weeks on the same diet, the content was 2,800 units. One drop of halibut liver oil per week for thirteen weeks caused a rise to 31,400 units. The incidence of spontaneous otitis media was precisely the same in these animals as in the control group. Analyses of livers of rats which had received, twenty-four hours beforehand, 1 or 2 drops of halibut liver oil make it possible to calculate that 13 drops should have raised the content in the liver to 36,400 units. Comparatively little, therefore, has been lost in the period of thirteen weeks. The animals with spontaneous infections did not have less vitamin in their livers.

The vitamin A content of livers of seventy children coming to autopsy was also determined. A summary of the results in table 2 indicates that older children who died of severe infections have less vitamin A in their livers than those who died of other causes. In several who died of severe infection, relatively high values were found. Very low values were observed in congenital atresia of the bile ducts (35 units), syphilis with lardaceous liver (31 units), and pneumonia fatal in the first two days of life (25, 160 and 95 units), low values were also observed in two older children, badly fed, who died of dysentery (580 and 835 units). It is possible that the low values found after fatal infections may have been the result of the infection. We have tried to get some idea about the rate of fall of vitamin A in the liver by comparing the average values found in livers of children who succumbed to severe infections at different times, in spite of the variability among children, the average does not fall much until the fifteenth to twentieth day. It is therefore possible that low values of vitamin A in the liver of older children may sometimes exist before the onset of severe infections, and lower resistance. Much more must be known about the normal vitamin A content of the liver in childhood. It should be pointed out that few if any of our patients had as little vitamin A as rats which seem adequately protected—300 units.

We have had the opportunity of analyzing livers of rats in an experiment conducted by Dr. Oliver R.

TABLE 2—Vitamin A Content of Liver Seventy Cases

Diagnosis	Number	Vitamin A Units per 100 Gm		
		Maximum	Minimum	Average (or Single Determination)
Children over 6 months of age				
No infection				
sudden death				
Pyloric stenosis	1			73 000
Status thymicolymphaticus	1			62 500
Cardiac failure enlarged thymus	1			50 800
Infections				
Miliary tuberculosis	4	23 800	14 500	19 100
Septic scarlet fever	10	55 800	5 400	16 600
Septicemia	8	55 800	3 000	16 600
Pneumonia	22	46 200	2 900	12 300
Other infections	6	20 900	3 500	12 300
Dysentery	2	835	580	707
Not infected				
Chloroform hepatitis	1			8 700
Diabetic coma	1			8 100
Children under 6 months of age				
No infection				
Newly born	4	5 973	1 510	3 940
Older infants (sudden death)	2	7 500	4 700	6 100
Infections				
Pneumonia—newly born	4	850	25	200
Not infected				
Severe hepatic disease	3	770	31	200
Hemorrhagic disease	1			95

McCoy on the effect of deficiency of vitamin A on susceptibility to infection with trichinosis. He finds that the rat, weaned at 4 weeks, then placed on a diet deficient in vitamin A for eight weeks, is very susceptible to this infection (vitamin A of liver, from 0 to 40 units), if the rat has received a diet of commercial dog-chow for eight weeks after weaning, resistance is good (A of liver from 220 to 315 units). If the rat is placed on the deficient diet at 8 or even 10 weeks, and infected at 12 weeks or 5½ months (respectively), the resistance is good although at death the liver is free of vitamin A. This work shows that the vitamin A stores

⁴ Care anemia is a misnomer. Carotene is usually present in the blood of rats over 2 years of age.

⁵ McCoord, A. B., and Clausen, E. L. Personal communication.

in the liver of older rats may readily be depleted, without causing marked loss of resistance. However, the resistance of the rat may be improved by the use of cod liver oil, which in the experiments cited raised the vitamin A of the liver from about 300 units to a level of from 8,000 to 15,000 units. Much more extensive work must be done with other types of infection. It seems likely, however, that, if the rat is deprived of vitamin A during the period of rapid growth, its tissues are so altered that resistance is lowered. It is suggested that vitamin A may be especially important during the period of human infancy.

CONCLUSIONS

The foregoing discussion seems to justify these conclusions:

1 Children over the age of 2 years are likely to receive a diet containing a sufficient amount of vitamin A. Results of analysis of the plasma for carotene suggest that not more than 5 or 10 per cent of recurring respiratory infections can be attributed to a low intake of carotene.

2 The livers of children at autopsy usually contain considerable amounts of vitamin A, whether or not these quantities are sufficient to protect against infection can be decided only by much more extensive study.

3 During the period of rapid growth in experimental animals, adequate amounts of vitamin A are needed. If vitamin A is withheld during rapid growth, the tissues are so altered that resistance to infection is low. If vitamin A is present during this period, the organism may subsequently be depleted of its stores of vitamin A without developing a marked loss of resistance to certain infections.

4 When rapid storage of vitamin A is desired, halibut liver oil, or cod liver oil, would seem more suitable than preparations of carotene, because of the more rapid absorption of vitamin A than of carotene. Carotene is poorly absorbed in the presence of fever or diarrhea.

5 It is possible that a large intake of carotene is undesirable.

6 Under ordinary circumstances, sufficient quantities of vitamin A are provided by a diet in infancy which contains milk, cod liver oil from the second week of life, and vegetables from the fifth or sixth month.

ABSTRACT OF DISCUSSION

DR HENRI J GERSTENBERGER, Cleveland. Two years ago, Dr Clausen presented this subject at the American Pediatric Society meeting, and he felt then that there was correlation between a low carotene content of the serum and a high incidence of infection, and the disappearance of infection with a rise in the carotene content of the blood. I took occasion at that time to doubt the interpretation that carotene acted in this fashion, namely, as a precursor of vitamin A, for two reasons. First, I had had ample opportunity to watch infants over many years who had regularly had an adequate intake of cod liver oil notwithstanding, these infants got infections and some died. In the second place, keratomalacia, the pathognomonic sign of complete deficiency of vitamin A in the diet, is not seen in human beings in this country. At least I have never seen a case and I doubt whether there is any one here who has. At that time I stated that possibly carotene is of value to the human body in some other capacity than as a precursor of vitamin A. In today's contribution Dr Clausen follows a more conservative course and I am in accord with what he has said. I do not think there is any good evidence to show that a liberal intake of carotene is essential in the prevention of

infections in human beings. It may be that the intake of carotene is of value in other directions than in the prevention of keratomalacia. But the notion that it is always a good thing to fill up on carotene, I think, is erroneous. I have expressed myself similarly in connection with uncontrolled and excessive, and often unnecessary, ingestion of viosterol. Particularly do I think it a mistake to take a large amount. The plan should rather be to administer the smallest amount considered to be necessary. However, carotene, as a precursor of vitamin A, is a normal food constituent often present in liberal amounts and, therefore, something different from viosterol for carotene gets into the system physiologically through the gastrointestinal tract. And yet, Dr Clausen may be right when he suggests that too much carotene may be taken. If, for instance, one is going to eat vegetables in amounts to equal the large intake of carotene in a concentrated form, I think that the gastrointestinal tract will object, and that may be an indication that too much carotene is being consumed.

DR I NEWTON KUGELMASS, New York. Infections are too widespread to be prevented universally by a single substance. Bacteria are too heterogeneous to be buffeted by mere vitamin A. Dr Clausen has translated these obvious clinical facts from his blood studies of children with infection. But even such an approach presents the limitation of the value of vitamin A in resisting bacterial infection. The colorimetric determination of serum carotinoids gives no indication of the actual body storage of vitamin A. The serum content of isomers of carotene is as yet not clearly correlated with their leukoform, vitamin A, stored in the liver and in other tissues. The mechanism of transformation of carotene into vitamin A is as yet unknown. In fact, it may be that children susceptible to infection are unable to effect such a transformation of carotene into active vitamin A. Carotene has been found to be adequate in the blood of the new-born and yet without any reserve of vitamin A in the liver. Determinations of vitamin A stored in the liver afford another approach in evaluating this problem. Thousands of livers examined post mortem revealed that 16 per cent of the population in Holland and 24 per cent of the population in England were deficient in vitamin A. The limitations of vitamin A as an anti-infective generally do not preclude its value specifically. The problem has been approached with the new-born. Their vitamin A storage is nil and yet they are immune to many infections. Their intra-uterine life requires no anti-infective agent. Colostrum has been found to be a rich source of vitamin A, but the hygienic care after birth does not even necessitate such provision. It has been found that large doses of carotene do not protect against infections of the upper respiratory tract but I have been impressed with the value of vitamin A in diminishing infections of the upper respiratory and intestinal tracts in 250 controlled children with malnutrition, chronic intestinal indigestion, bronchial asthma and hay fever, respectively, wherein the vitamin A intake has necessarily been deficient. I have concluded that vitamin A possesses no systemic anti-infective action but rather local tissue defense of such organs as the eyes, lungs and intestine. Vitamin A inadequacy in these secondary nutritional problems produces keratinization which leads to infection. Vitamin A thus increases differential permeability of membranes rather than affecting immunologically diverse bacteria.

Heredity and Cancer—The principal weakness in studies of individual families upon which many writers base their opinions is that the families so studied are usually ones which have shown a marked tendency toward cancer, and thus come to the attention of the student. There are unquestionably families which show a strong predisposition to the disease, but these are rare in proportion to the total population and too much weight is frequently given to the testimony from their study. The main question to be considered is: Are persons who have a family record of deaths from cancer any more likely to die from that disease than those without such a history? So far there has been no conclusive proof that a person with one cancer death in the family, either a parent or a brother or sister, need fear a predisposition to the disease.—Hunter Arthur. *The Inheritance of Cancer in Mankind*, *Am J Cancer* 19 79 (Sept.) 1933.

FAVISM

REPORT OF A CASE

THOMAS McCRAE, MD, FRCP (LOND)

AND

J C ULLERY, MD

PHILADELPHIA

Favism (fabism) is a syndrome caused by inhalation from bean plants when in blossom or by ingestion of the beans (*Vicia fave*) and characterized by an acute febrile anemia with jaundice, hematuria and hemoglobinuria. It occurs most frequently in Sicily and southern Italy, and most of the reports are found in Italian literature. We have not been able to find a report in American or English literature. It is possible that cases have been reported under another designation.

REPORT OF CASE

History—Dec 12, 1932, J C, a white man aged 53, was admitted to the Pennsylvania Hospital in a serious condition. He had a ghastly appearance due to a combination of jaundice and a curious ashen gray color, particularly of the face. He showed extreme weakness and complained of frequency of urination and the passage of black urine. Lesser complaints were of anorexia and constipation. He was intelligent and able to give a clear history. Dec 7, 1932, he had eaten a very hearty meal, one of the principal constituents of which was cooked beans, of which he had taken a large amount. An hour after the meal he began to feel marked weakness and was compelled to lie down. Two hours later he voided urine and noticed that it was very black. From this time until his admission to the hospital he was compelled to be in bed, the passage of black urine had continued and there had been marked frequency of urination, usually about ten times in the twenty-four hours. December 7 he had taken a large dose of epsom salt and stated that blood was present in one of the stools after this. Shortly after the onset he began to have pain in the back, which had been constant. His weakness had increased markedly and since the second day of his illness he had not been able to get out of bed. On December 10, jaundice was noted for the first time and this apparently increased rapidly.

The patient volunteered the statement that he had similar attacks during his childhood in Sicily and associated his present illness with these. At the age of 7, while walking in the country, he passed a field of plants in full bloom. Soon after this he began to feel dizzy and weak, and he was able to walk a short distance only when he lost consciousness. He was found lying on the ground and was carried home regaining consciousness later in the day. Following this he passed bloody urine for three or four days and felt marked weakness for about ten days, after which he recovered his usual health. He stated that he had identical attacks each year from the age of 7 until he was 14, having one attack each year under the same circumstances. On each occasion he lost consciousness but did not know the exact duration of unconsciousness until the last attack when he was told that it persisted for fifteen hours. He came to the United States at the age of 14 and had had no similar trouble until his present illness. With the onset of this illness he at once recalled the experiences of his childhood and associated the beans which he had eaten with the plants which had affected him when in flower. He thought that the beans which he had eaten were the same as those which grew on the plants in Sicily.

In his past history there was nothing of significance otherwise. He apparently had scarlet fever in childhood. There was no history of malarial fever.

Examination—The patient presented a remarkable appearance. He looked very ill, there was a curious ashen gray color of the face and pallor of the mucous membranes with jaundice which was much more marked in the skin than in the sclerotics. The heart was found to be somewhat enlarged with a soft systolic murmur at the apex. The abdomen was flat and did not show any tenderness except on palpation of the liver. In

the right nipple line the edge of the liver was felt 3 cm below the costal margin and in the midline 4.5 cm above the navel. The spleen was not felt.

The temperature on admission was 99 F and rose rapidly to 101.6, in the next two days there was slight fever, which never reached 100, after which the temperature was normal. The pulse was 100 on admission, the blood pressure 112 systolic, 60 diastolic, and the respirations 24.

The amount of urine during the first twenty-four hours was 2,500 cc, it was absolutely black and the reaction was alkaline. It contained a moderate amount of albumin and large amounts of hemoglobin. There were some red blood cells but not a large number. There were a great many granular casts.

The blood examination showed hemoglobin 38 per cent, red blood cells 1,420,000, and leukocytes 19,300, of which 73 per cent were polymorphonuclears and 27 per cent small mononuclears. The red blood cells appeared to be normal on the first examination.

Course—The rapid improvement was remarkable. Two days after admission he felt much better and seemed to be stronger. The jaundice was distinctly less and the liver enlargement slightly less. By December 20 the jaundice had almost entirely disappeared and the edge of the liver could no longer be felt below the costal margin. The amount of urine varied somewhat, the average amount being from 1,500 to 2,000 cc. The specific gravity varied from 1.014 to 1.028. The hemoglobinuria continued until December 14, when the gross appearance showed it for the last time, and after this date no more red cells were found in the urine. Granular casts were present for a few days longer but albumin was not found in the urine after December 14.

The blood count rose rapidly. December 16, the hemoglobin was 42 per cent, red blood cells 1,900,000 and leukocytes 13,000. December 29, the hemoglobin was 74 per cent, red blood cells 3,540,000 and leukocytes 6,500. Reticulocytes were present in considerable numbers, 14 per cent. December 13, rising to 22.2 per cent, December 15, after this they fell to 10 per cent, January 5, and to 18 per cent, January 15. Within two days after admission the red blood cells showed considerable variation in size, and 11 nucleated red cells (normoblasts) were found for each 100 leukocytes. December 20, the variation in the size of the red cells continued and 4 nucleated red cells were found per hundred leukocytes. By January 6, the hemoglobin had risen to 83 per cent, the red blood cells were 4,200,000, and the leukocytes were 6,600. The red cells and platelets appeared perfectly normal.

The blood urea nitrogen, December 13 was 37.1 and creatinine 14, December 20, the figures were 18.6 and 1.2. The blood sugar shortly after admission was 72. The phenolphthalein test, December 20 gave 47 per cent in two hours. January 9, a second phenolphthalein test gave 60 per cent in two hours.

December 14, the blood showed beginning hemolysis at 0.36 per cent of sodium chloride and complete hemolysis at 0.32 per cent. December 16, hemolysis began at 0.40 per cent and was complete at 0.32 per cent.

No evidence of blood was found in the stools.

The patient's blood gave a very strong reaction to both the Wassermann and Kahn tests. As paroxysmal hemoglobinuria has been described as due to syphilis the Arneith-Landsteiner serologic test was done, January 12. Serum was obtained and mixed with normal red blood cells. The mixture was chilled for ten minutes and then brought up to body temperature in half an hour. After centrifugating the serum showed no hemolysis. This is found to be present in paroxysmal hemoglobinuria of syphilitic origin. The study of the spinal fluid gave normal results in every way.

The patient was discharged from the hospital, January 19, in very good condition. His color was good, the jaundice had entirely disappeared, and the urine was clear and absolutely normal. The heart was of normal size and the soft systolic murmur had disappeared. Neither the liver nor the spleen could be felt. The urine has remained clear since his discharge from the hospital and the blood count February 20 was normal.

Specimens of the beans which he had eaten were obtained and an extract of them was used for intradermal skin tests. These were first tried in a dilution of 1:100,000 but no reaction was obtained. Two days later the same tests were tried in a dilution

of 1,000. There was a definite local reaction with erythema and some elevation about the area. With this the patient complained of general malaise and dull aching pains in the lumbar region, which began about two hours after the test was done. The urine remained perfectly clear. It was four days after this test before the patient felt that he had returned to his previous condition and by January 14 he was able to be out of bed again. January 15, he was given another test, 1 cc of 1:1,000 being given intradermally. There was the same moderate local reaction and again he complained of lumbar pains and general malaise. In two days this disappeared.

COMMENT

This disease or syndrome has been known from ancient times and is mentioned in the works of Herodotus, Pythagoras and Empedocles. The modern study dates from about the middle of the 19th century. It was early recognized that the disease might occur in those who had the idiosyncrasy if they came near a field with the plants in bloom or ingested a very small quantity of the beans. As the disease occurs principally in Sicily, Sardinia and some of the southern provinces of Italy, it is natural that nearly all the articles dealing with it are written by Italian observers. An excellent description is given by Gasbarrini.¹ References in English literature appear to be very few. In the German literature it is termed *fabismus*.

ETIOLOGY

Heredity plays a part in some cases and has been reported in 20 per cent of some reported series. There are reports of families in which every member for several generations has been affected and in such families the disease is said to be severe. The susceptibility varies greatly in the individual. Some who have eaten the beans with impunity for years suddenly show the idiosyncrasy and later become free from it. The first attack may occur in adult life or old age. The disease has occurred in nursing infants when the mother has eaten the beans. In some such cases the mother is not subject to favism.

It occurs at any age, but young children and adults are affected more often than youths or the aged. Sex apparently has no influence.

Malaria and syphilis have been suggested as having an influence, but there is no evidence to support this.

In a series of 1,211 cases of favism, 459 (38 per cent) were due to inhalation by being near the plants in bloom and 725 (62 per cent) were due to ingestion of the beans, raw or cooked. Ingestion of fresh beans seems to be the cause more frequently than eating cooked beans. It is stated that the gastro-intestinal features are usually more severe from eating cooked beans.

In a locality where the disease occurs, the prevalence may vary from year to year. At one time there are isolated cases and in another year it may almost be described as epidemic.

PATHOGENESIS

There has been a great deal of discussion and various opinions. There is no agreement as to whether the effect is more marked with the fresh bean or the dried beans. An anaphylactic action has been obtained in animal experimentation, the animals having previously been sensitized. There are difficulties in any explanation. Of the people who eat the beans in the raw state or inhale the pollen, only a small proportion develop symptoms, and the point is emphasized that there is no

relation between the amount of beans ingested or the pollen inhaled and the severity of the symptoms. Death has resulted in individuals who have been exposed to a very small amount. When eaten, the bean protein may enter the circulation because of an abnormal permeability of the intestinal wall or from lack of digestive power, possibly some disturbance in the liver causes hypersensitiveness and then anaphylactic shock.

THEORIS

It has been suggested that the disease may be due to foreign substances, such as a fungus, but there is no proof of this. In animals a condition of hypersensitiveness and anaphylactic shock can be produced by feeding the beans or by injecting the protein of the bean first and later feeding the beans. There is evidence that the disease rarely occurs in persons who eat the beans regularly but often occurs after the first time the beans are eaten in a given year. The general opinion is that the syndrome represents a hypersensitiveness to the protein of the bean and that the manifestations are due to an anaphylactic reaction.

The symptoms caused by inhalation of the pollen are apparently identical with those due to eating the beans. Apparently the amount of protein inhaled has very little influence. It is pointed out that in this particular plant the pollen is rather sticky, which interferes with any wide dissemination.

The reports of pathologic examinations are very few. The death rate is given as about 8 per cent in Sardinia. In a certain number of cases, death occurs in from two to three days, apparently from the severe anemia.

CLINICAL FEATURES

The incubation period is given as from two to six hours when due to inhalation from the plants in flower and from one to two days following the ingestion of the beans. In our patient this period was much shorter, as the attacks of unconsciousness from inhalation occurred when he was quite close to the fields, and within an hour from ingestion of the beans in this attack.

The symptoms at onset are fever, sometimes with chills, often vomiting, marked weakness and a sense of oppression, twitching, vertigo, ringing in the ears and unconsciousness in many cases. All writers comment on the marked pallor and the rapid onset of jaundice which usually increases to the third day. Usually within an hour after the onset large amounts of bile are found in the urine. The statement is made that the jaundice is never deep, but in our patient it was marked. The most dramatic occurrence is the passing of bloody urine, which occurs very promptly and which may clear very rapidly. The fever varies greatly. It is usually irregular but may be continuous and rarely goes above 103°. The termination is usually by lysis. The digestive symptoms do not always occur and seem to be more common in children. There may be nausea, vomiting and diarrhea. When death occurs, it apparently has resulted from the severe anemia. In the majority of the cases the liver is somewhat enlarged and tender. Emphasis is laid on the fact that enlargement of the spleen is usually a very constant feature, but occasionally it is lacking.

In the regions where the disease is prevalent, malaria is common and many patients have a chronically enlarged spleen. In our patient there was no enlargement of the spleen to be made out. Hemoglobinuria appears in from a few hours to a day after the inhala-

¹ Gasbarrini. Il favismo. Policlinico 22: 1505 and 1537, 1915.
Preti. L. Klin. Wchnschr. 6: 2429, 1927.

tion or ingestion and may last for three or four days. It usually disappears very rapidly. Apparently there is usually a decreased amount of urine and in very severe cases there may be anuria for a time. In our patient the output of urine was not diminished. The urine apparently never shows any hemolytic effect on the patient's red blood cells or on those of a normal individual.

BLOOD

The decrease in the number of red cells may be so rapid and so marked that the patient rapidly dies, with a blood count of about 1,000,000 and the hemoglobin about 20 per cent. At the onset there may be leukopenia, the neutrophil cells being reduced, and this is followed by leukocytosis, which is practically always present. It is stated that the blood platelets are very few at the onset and later on are present in much larger numbers than normal. Some consider that the increase in the platelets suggests a favorable prognosis. The resistance of the red blood cells does not seem to be particularly altered, and auto-agglutination of the red blood cells has never been found. The occurrence of hemoglobinemia is not constant. Apparently the blood serum of patients with favism has no hemolytic action either on the patient's blood or on that of normal persons. The injection of blood serum from a patient has produced hemoglobinemia with leukocytosis in a rabbit, but this is not a constant result.

Various forms are described varying from abortive attacks to what may be described as a malignant form. The abortive type may follow exposure to a field of plants in bloom, or it may be caused by the ingestion of a few beans, with dizziness as the most prominent symptom.

Usually in from two to four days the symptoms decrease, the hemoglobin and bile pigments disappear from the urine, urobilin may be present for some time. The blood condition improves rapidly. In some cases, tachycardia persists for a time.

The condition is apparently a true hemoglobinuria. The marked breaking down of the red cells accounts for the extreme anemia. It is suggested that the enlargement of the liver and perhaps of the spleen also results from the rapid hemolysis.

DIAGNOSIS

The diagnosis should be made without difficulty in regions where the disease usually occurs. Elsewhere cases must be unusual, and without some clue the diagnosis is difficult unless some lead is given by the patient, as in the present case. The picture of fever, severe anemia, jaundice and hemoglobinuria is unusual and the possible causes are not many. Malarial fever with hemoglobinuria should be readily excluded and the history of consumption of beans, if asked for, should be readily obtained. Paroxysmal hemoglobinuria shows a specific autohemolysis in the blood by the Donath-Landsteiner test, which is absent in favism and the general features are not as severe. Slight or abortive forms of favism may be very difficult of diagnosis.

TREATMENT

In the early stages the shock may be very marked, for which epinephrine gives good results. For severe anemia blood transfusion is necessary, otherwise the treatment is symptomatic. Large doses of iron are indicated.

1929 Spruce Street.

Clinical Notes, Suggestions and New Instruments

CONGENITAL CIRSOID ANEURYSM OF THE LEG

MONT R. REID, M.D., CINCINNATI
AND

HERBERT G. CONWAY, M.D., NEW YORK

Among the conditions that can have the effect of causing an overgrowth of an extremity during the growing period of life may be mentioned chronic osteomyelitis and abnormal arteriovenous communications. This effect is apparently due to an abnormal increase of the arterial blood supply.

An increased length of the limb resulting from abnormal arteriovenous communications has been reported by Giraldez,¹ Cordonnier,² Davis,³ Hewett,⁴ Franz⁵ and Reid.⁶ In four of the cases reported by these authors the etiology of the condition was trauma, while in two cases it was congenital. In a congenital case,⁶ in a woman, aged 36, the affected leg was 6 cm. longer than the normal leg.

These cases have been reported under the various titles of abnormal arteriovenous communications, arteriovenous aneurysm, cirsoid aneurysm, racemose aneurysm and pulsating angioma. In all instances the cause has been abnormal communications between the arteries and veins. The most com-



Fig. 1.—Lateral view of legs showing increased length and increased diameter of right leg caused by cirsoid aneurysm.

monly used term is that of cirsoid aneurysm and, for that reason, we have chosen it as the title for this report.

A white girl, aged 1 year, was admitted to the Children's Hospital because of an abnormal enlargement of the right leg, associated with pulsation of the extremity and an indolent postoperative ulcer of the leg.

Three weeks after delivery the mother noticed a small area of bluish discoloration over the posterior aspect of the lower third of the infant's right leg. This was attributed to a bruise. A few days later the observation was made that the affected extremity was longer and of greater diameter than the opposite one. This observation was confirmed by a physician's measurements. Five weeks after birth the baby developed the classic signs and symptoms of pyloric stenosis for which a Fredet-Rammstedt operation was performed. Convalescence from this operation was uneventful except for the steady increase in the size of the right leg. At this time the superficial veins of the extremity were enlarged and could be seen

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¹ Giraldez. Bull. Soc. anat. de Paris 20: 298, 1854.

² Cordonnier. T. Thec. de Paris 1864, Number 57.

³ Davis. G. G. Tr. Philadelphia Acad. Surg. 17: 212, 1915.

⁴ Hewett. Pre. cott. Lancet 1: 146, 1867.

⁵ Franz. Arch. f. Klin. Chir. 75: 572, 1905.

⁶ Reid. M. R. Studies on Abnormal Arteriovenous Communications. Acquired and Congenital. I. Report of a Series of Cases. Arch. Surg. 10: 601 (March) 1925. II. The Origin and Nature of Arteriovenous Aneurysm. Cirsoid Aneurysms and Simple Angiomas. ibid. 10: 996 (June) 1925. III. The Effects of Abnormal Arteriovenous Communications on the Heart, Blood Vessels and Other Structures. ibid. 11: 25 (July) 1925. IV. The Treatment of Abnormal Arteriovenous Communi-

CIRSOID ANEURISM—REID AND CONLI

JULIA A. M. A.
Oct 28 1933

to pulsate. The skin over the thigh and calf was described as quite tense and shiny.

When the patient was 3 months old Dr Roy D McClure operated on the extremity, ligating a number of arteriovenous communications through an incision over the posterior aspect of the calf. Following this operation the size of the right leg did not change. A second operation in this location was carried out by Dr McClure when the baby was 6 months old.

When seen by us, the patient was 1 year old. Physical examination was essentially negative except for the right leg. The heart borders were apparently within normal limits, the lungs were normal, rectal temperature was 100.4 F. Examination of the right leg showed that it was distinctly larger than the left.

Results of measurements are given in table 1.

TABLE 1—Measurement at 1 Year

Circumference	Right	Left
At trochanter	34 cm	23 cm
Of upper third of thigh	31.5 cm	21 cm
Of lower third of thigh	25 cm	18 cm
At knee	25 cm	16 cm
Of upper third of leg	24.5 cm	14.5 cm
Of middle third of leg	23 cm	13 cm
Of lower third of leg	23 cm	13 cm
Of foot (near heads of metatarsals)	15 cm	12 cm

The entire right leg was palpably warmer than the left. Large inguinal nodes were felt on the right side these varied from 1 to 2 cm in diameter and were very discrete and firm. Over the dorsal aspect of the lower third of the leg there was a shallow ulcer, 5 by 8 cm. The skin about its edges exhibited a bluish discoloration. A marked systolic bruit was heard in the popliteal space, over the entire leg and also over the large veins on the inner aspect of the thigh. On digital compression of the femoral artery in the groin the entire extremity decreased in size and became pale.

Roentgenograms showed an increased length and diameter of all the bones of the right leg, and a teleosteoradiogram of the chest showed some increase of the outline of the heart to the left.

In the first six weeks of our observation the leg increased slowly but steadily in size and the ulceration over the lower part of the leg increased in extent. Intercurrent parotitis had caused operative procedures to be delayed. Measurement at this time demonstrated the rapid increase in the size of the leg (table 2).

At this examination the continuous bruit could be heard all over the large vessels on the femoral ligament. Pressure and no pallor. The skin over the leg had now become tense and shiny, and there was intense local heat in the thigh and region of the calf.

May 12 1931, under ether anesthesia, Dr Reid made a low inguinal incision and ligated the femoral vein above Poupart's ligament. An occlusive Halsted aluminum band was applied

to the femoral artery in the same location. It was estimated that the artery and vein were approximately three times the size of the normal vessels of a 14 months old infant. Two large lymph nodes were removed for microscopic study and presented only endothelial hyperplasia.

Following the operation the leg became softer, cooler and smaller, though the bruit was still audible over the calf and thigh. The skin over the leg below the knee took on a more mottled appearance. Postoperatively the child developed lobar

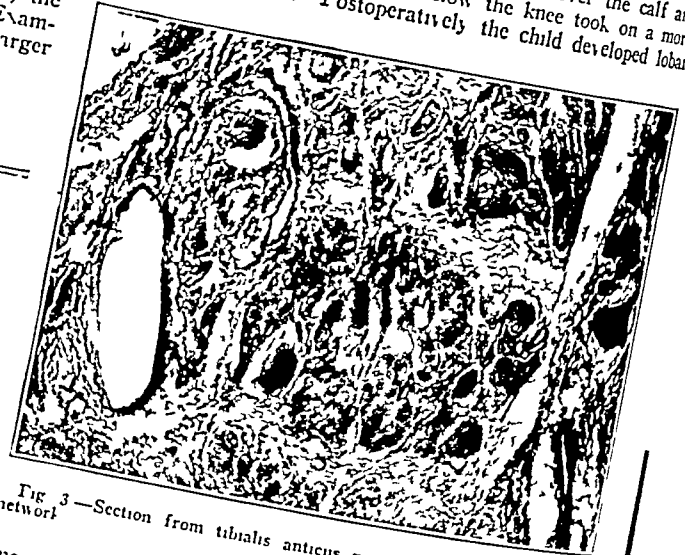


Fig 3—Section from tibialis anticus muscle showing dense vascular network.

pneumonia at the base of the right lung from which she promptly recovered. During the next four weeks there was a slight fever, the rectal temperature varying from 100 to 102 F. The bruit diminished in intensity over the thigh and completely disappeared from the region of the calf. This was interpreted as evidence of thrombosis of vessels subsequent to infection about the ulcerated wound on the posterior aspect of the calf. Because of the extent of the circulatory embarrassment in the extremity and the rather rapid progress of the infected ulceration, amputation was considered necessary.

TABLE 2—Measurement at 1 Year and 6 Weeks

Circumference	Right	Left
At trochanter	34 cm	23 cm
Of upper third of thigh	31.5 cm	21 cm
Of lower third of thigh	25 cm	18 cm
At knee	25 cm	16 cm
Of upper third of leg	24.5 cm	14.5 cm
Of middle third of leg	23 cm	13 cm
Of lower third of leg	23 cm	13 cm
Of foot (near heads of metatarsals)	15 cm	12 cm

June 11, under ether anesthesia, Dr Reid performed a mid thigh amputation using two tourniquets, one above and one below the level of incision, so that when the extremity was elevated the infected material from the large venous sinuses of the extremity did not drain down into the operative field. This technic of the application of two tourniquets for leg amputation is described elsewhere.

The child had an uneventful convalescence and was sent home from the hospital shortly after operation, with a well healed amputation stump. No bruit could be detected after the amputation. The child has remained well and shows no evidence of the original vascular lesion developing in the stump.

The removed leg measured 23 cm from the patella to the os calcis and 7 cm from the amputation line to the patella. Motion of the knee joint was not limited. Over the middle and lower thirds of the posterior aspect of the leg was a deep ulceration measuring 5 cm transversely and 9 cm in length. Its base was formed of unhealthy, pale granulation tissue.

superimposed on pale, edematous and hyalimized gastrocnemius and soleus musculature. Minute vascular thromboses were seen in this region. The anterior aspect of the leg presented musculature that exhibited a spongy appearance and numerous vessels that resembled an angioma. Fixation of the specimen allowed for its section transversely into disklike sections, from which tissue was taken for microscopic examination. The photomicrographs showed venous dilatation, thrombosis and great abundance of blood vessels.

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RAYMOND HERTWIG Secretary

AUNT JEMIMA BUCKWHEAT, CORN AND WHEAT FLOUR

Manufacturer—The Quaker Oats Company, Chicago

Description—Self-rising pancake flour containing buckwheat, corn, and wheat flours, powdered skim milk, corn sugar, soda, calcium acid phosphate and salt.

Manufacture—The flours are heat processed and bolted. The ingredients are mixed in definite proportions in a batch mixer, bolted and automatically packed in cartons. Each batch is subjected to a baking test.

Analysis (submitted by manufacturer) —		per cent
Moisture		9.6
Ash		6.3
Fat (ether extraction method)		1.9
Protein (N \times 6.25)		11.2
Crude fiber		1.2
Carbohydrates other than crude fiber (by difference)		69.8
Calories—3.4 per gram 97 per ounce		

MCCORMICK'S BEE BRAND MACE

Manufacturer—McCormick and Company, Inc., Baltimore

Description—Ground mace (dried arillus of *Myristica fragrans* Houtt.)

Manufacture—The arilode, or covering of the nutmeg is removed either by stripping with a knife or by hand, dried on mats in the sun, exported in wooden cases, and ground and packed in tins at the packing plant.

Analysis (submitted by manufacturer) —		per cent
Moisture		9.7
Total ash		2.3
Acid insoluble ash		0.2
Volatile ether extract		10.1
Nonvolatile ether extract		24.0
Protein (N \times 6.25)		5.7
Starch		28.3
Crude fiber		3.8
Carbohydrates other than crude fiber (by difference)		44.4

Claims of Manufacturer—Conforms to the United States Department of Agriculture standard.

AMBROSIA CREAM CORN MEAL

Manufacturer—Texas Star Flour Mills, Galveston, Texas

Description—Finely granular white corn meal practically free from corn germ and bran.

Manufacture—White corn is cleaned by the usual grain cleaning methods to remove foreign material and is tempered with live steam to loosen the bran and germ from the endosperm and enable separation of the latter by scouring and aspiration methods. The endosperm or corn grits are ground, sifted and graded and remaining bran or germ is removed. Endosperm

of a uniform fine granular size is properly dried and packed in sacks.

Analysis (submitted by manufacturer) —		per cent
Moisture		13.0–13.5
Ash		0.48–0.55
Fat (ether extraction method)		1.8–2.4
Protein (N \times 6.25)		7.2–7.6
Crude fiber		1.5–2.3
Carbohydrates other than crude fiber (by difference)		76.0–73.7
Calories—3.5 per gram 99 per ounce		

MCCORMICK'S BEE BRAND ALLSPICE

Manufacturer—McCormick and Company, Inc., Baltimore

Description—Ground allspice (pimento)

Manufacture—Fully grown, green allspice or Jamaican pimento is sun dried on mats for from eight to twelve days and exported in bags to the company's packing plant, thoroughly cleaned by blowing, scouring and suction operations, ground in water-cooled mills for preventing loss of essential aromatic constituents, and automatically filled into tins.

Analysis (submitted by manufacturer) —		per cent
Moisture		7.7
Ash		4.6
Ash insoluble in hydrochloric acid		0.2
Nonvolatile ether extract		5.9
Volatile ether extract		4.2
Protein (N \times 6.25)		5.6
Starch (diastase method)		2.9
Crude fiber		22.9
Carbohydrates other than crude fiber (by difference)		49.1

Claims of Manufacturer—Conforms to the United States Department of Agriculture definition and standard.

BLISS PANCAKE BRAND GOLDEN SYRUP (CORN SYRUP AND REFINERS SYRUP)

Manufacturer—Bliss Syrup and Preserving Company, Kansas City, Mo.

Description—Table syrup, corn syrup flavored with refiners' syrup.

Manufacture—Corn syrup is mixed with refiners' syrup (90 per cent corn syrup, 10 per cent refiners' syrup). The mixture is packed in the usual way (THE JOURNAL, March 5, 1932, p. 817).

Analysis (submitted by manufacturer) —		per cent
Moisture		24.3
Ash		0.5
Fat		trace
Protein (N \times 6.25)		0.1
Reducing sugars as dextrose		32.1
Sucrose (copper reduction method)		2.3
Dextrins (by difference)		40.7

(No methods are available for accurately determining the composition of syrups of this nature; therefore the foregoing analysis is roughly approximate.)

Calories—3.0 per gram 85 per ounce.

(a) GILSTERS BEST SELF RISING FLOUR (BLEACHED)

(b) GILSTERS FEATHERLITE SELF RISING FLOUR (BLEACHED)

(c) GILSTER'S MOTHER'S JOY SELF RISING FLOUR (BLEACHED)

Manufacturer—Gilster Milling Company, Mill, Steelville, Ill. Office, Chester, Ill.

Description—(a) Self rising flour prepared from bleached soft winter wheat 'short patent' flour, calcium acid phosphate, salt and baking soda.

(b) and (c) Self rising flours prepared from bleached soft winter wheat 'standard patent' flour, calcium acid phosphate, salt and baking soda.

Manufacture—The ingredients are mixed in definite proportions in a batch mixer and automatically packed in cotton bags. The flour is bleached with chlorine and a mixture of calcium phosphate and benzoyl peroxide.

Claims of Manufacturer—For biscuits, cakes and pastry baking.

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SATURDAY, OCTOBER 28, 1933

VITAMIN A, CAROTENE AND COUGH DROPS

At the recent session of the American Medical Association, in a discussion before the Section on Gastro-Enterology and Proctology, Gorham¹ said "The subject of vitamins and their relation to the so-called deficiency diseases has become so complicated that most of us are unable to follow the course of events related to this field with any degree of orientation." Vitamin D and irradiated ergosterol were at first the subject of widely varying claims and counter-claims. Today the advantages and limitations of the vitamin D carrying substances are rather well established. Now confusion and exaggeration distort our views of vitamin A and its precursor carotene. Some manufacturers promote vitamin A and carotene products without regard to lack of substantiation for the claims that are made.

From the accumulating investigative evidence it seems almost certain that carotene may be converted in the liver to vitamin A. Thus all the claims of physiologic activity for vitamin A are transferred to carotene—the provitamin A. Manipulators of scientific diction promptly termed carotene "primary vitamin A" and vitamin A as known, "secondary vitamin A." The result is merely more confusion and chaos in scientific literature.

Opinions vary as to the value of vitamin A, in the diet both of the well and of the sick. Some investigators have applied the term "anti-infective" to fat-soluble vitamin A, because an experimental animal, deprived of vitamin A, is susceptible to infection. However, the usefulness of administering vitamin A preparations as a means of preventing respiratory infections in human beings is far from established. The Council² authorized the following statement on this subject at its last annual meeting:

The Council has required that no advertising submitted to it for vitamin A preparations should be permitted to go beyond

¹ Gorham F D. Vitamin B Deficiency and the Atrophic Tongue. Discussion J A M A 101 1308 (Oct 21) 1933.
² Annual Meeting of the Council on Pharmacy and Chemistry J A M A 100 1402 (May 6) 1933.

the claim that vitamin A is an aid in building up resistance that mention of specific diseases or implied reference to respiratory diseases by mention of lowered resistance due to wet weather, drafts, etc., is objectionable. The Council's referee pointed out that controlled experiments in a large clinic had afforded no evidence to show that the use of cod liver oil or other vitamin A preparations caused a lower incidence of respiratory diseases.

But a few years ago ultraviolet irradiation—or the vitamin D effect—was claimed to be a valuable protective agent against respiratory diseases. Clinical evidence (particularly on infants and children) under controlled conditions failed to demonstrate that this agent was of decided benefit in this respect. Hess and his co-workers³ recently reported the results of a careful study of the use of vitamin A in respiratory diseases. The vitamin A was given in the form of cod liver oil and halibut liver oil, also employed was an oil solution of carotene. These studies indicate that in respiratory infections there is no difference, under controlled conditions, between groups of children receiving vitamin A in fish liver oils or provitamin A (carotene) and control groups not thus supplied. It was concluded that there is no clinical basis for designating or considering vitamin A as the anti-infective vitamin. Furthermore, there seems to be little evidence of any widespread deficiency of vitamin A in the national dietary, according to a questionnaire widely circulated by these New York investigators. Still more recent work confirms the conclusions of Hess and his associates. Elsewhere in this issue, Clausen and McCoord⁴ of Rochester, N Y, report further on the limitations of the anti-infective value of provitamin A (carotene). A chemical method of determining the relative carotinoid content of the blood in human beings was employed. These investigators found that in severe infections the amount of carotinoids was below normal, but they contend that a lower level of carotinoids cannot be considered as preceding, or predisposing to, the infections, but, rather, as a consequence to the infection. This lowering may be due to any of three causes: (1) more rapid utilization in fever, (2) slower absorption, and (3) poor appetite. They found that when the carotinoid content of the blood was increased appreciably above normal, susceptibility to infection rises. This suggests a possible injurious action of excessive carotene intake and bears out the warning made last spring by the Council on Pharmacy and Chemistry² in reference to this question. The Rochester investigators emphasize the fact that children over the age of 2 years are likely to receive a diet containing a sufficient amount of vitamin A and that a relatively small percentage of recurring respiratory infections can be attributed to a low intake of carotene. They further conclude that during the period of rapid growth in experimental ani-

³ Hess A F, Lewis J M and Barenberg L H. Does Our Dietary Require Vitamin A Supplement? J A M A 101 65, (Aug 26) 1933.

⁴ Clausen S W and McCoord Augusta B. Limits of the Anti-Infective Value of Provitamin A (Carotene). J A M A 101 1384 (Oct 28) 1933.

mals, adequate amounts of vitamin A are needed. If vitamin A is withheld during rapid growth, the tissues are so altered that resistance to infection is low. If vitamin A is present during this period, the organism may subsequently be depleted of its stores of vitamin A without developing a marked loss of resistance to certain infections. When rapid storage of vitamin A is desired, halibut liver oil, or cod liver oil, would seem more suitable than preparations of carotene, because of the more rapid absorption of vitamin A than of carotene. Carotene is poorly absorbed in the presence of fever or diarrhea. In these views they are in agreement with Hess and his co-workers. Clausen also makes the statement that "under ordinary circumstances, sufficient quantities of vitamin A are provided by a diet in infancy which contains milk, cod liver oil from the second week of life, and vegetables from the fifth or sixth month."

The foregoing discussion is of special interest at this time in view of the recent announcements that the S M A Corporation has agreed to supply carotene—regrettably called "primary vitamin A"—to the manufacturers of Smith Brothers Cough Syrup and Cough Drops (*Drug Trade News*, Oct 3, 1933). The products are now being heralded in extravagant advertisements in street cars. One hardly anticipates scientific accuracy from the promoters of so-called cough drops. One does anticipate that nostrum promoters will continue to avail themselves of pseudoscience to promote sales. The observations of Hess, Clausen, and others show that there is no scientific basis on which any claim can be made for the rationality of including vitamin A in a cough syrup. *THE JOURNAL* knows of no evidence that the S M A Corporation or the manufacturers of Smith Brothers Cough Syrup and Cough Drops have developed to show whether or not the carotene in cough drops maintains its potency, whether there is danger of carotinemia from the use of unlimited amounts of such products, or whether the amount of carotene claimed to be present is as effective in Smith Brothers Cough Drops as in milk. There is nothing to show the alleged advantage of adding vitamin A to cough syrup. Certainly there is no evidence, so far, that it relieves cough. There is danger in dependence on such nostrums in the loss of precious time by those suffering with respiratory disorders who have been misled by this propaganda.

No manufacturer of integrity, no firm with the prestige and background of the S M A Corporation can afford to be associated with such meretricious quackery, whatever the financial return. The chief value of any cough drop is to keep one's mouth shut—and to yield a demulcent effect. For this purpose there are hosts of preparations on the market, sold without the hocus focus and propaganda now connected with the so-called non-infective vitamin. In the past *THE JOURNAL* has criticized other ethical manufacturers for making their

manufacturing facilities available to promoters of patent medicines and nostrums. For some centuries the world has looked askance at those who let not the right hand know what the left hand doeth. The vicissitudes of the depression have driven many into strange and alarming relationships.

MR KINGSBURY SPEAKS FOR THE MILBANK FUND

In the annual report of the Milbank Memorial Fund for 1932, just made available, the secretary of that fund pays his respects to the attitude of the medical profession in relation to the final report of the Committee on the Costs of Medical Care. Mr John A. Kingsbury recognizes that the committee failed to propose a comprehensive plan which would solve the basic problem with which it was concerned. He says

This failure, cannot be ascribed wholly to a lack of vision or of courage on the part of all of its members, in all fairness, it should be said that much of the fault lay with obstructionists' tactics on the part of certain groups of physicians who generally control medical organizations and often are able to use the great prestige of these organizations to prevent, rather than to promote, the delivery of adequate medical services to all of the people. Such an attitude is difficult to understand at the moment since it is obvious that no solution will meet the underlying problems of providing medical care to all of the people which does not, at the same time, provide better facilities for scientific medicine as well as higher compensation for the rank and file of physicians which does not safeguard the confidential relationship between patient and doctor, and which does not guarantee the freedom of choice of physician to the patient and full scope, for the physician, for private practice among that portion of the population which can afford to pay for it. But looking at the history of medicine and public health in perspective such an attitude is not so strange as it appears, it has characterized the practice of medicine for centuries. As in other instances, when the public good becomes predominant this phase of medicine will pass and a comprehensive plan will emerge and will be adopted.

Proceeding in his discussion Mr Kingsbury says that some plan for conservation of the people's health on a national scale ought to be given immediate consideration. The report calls attention to lowered appropriations for the public health service in some states and finally says that in Indiana the state department of health has been virtually abandoned. The medical profession will, of course, appreciate the implied compliment in Mr Kingsbury's realization of the fact that medical leaders successfully opposed the plan of this foundation in cooperating with some others to put over, through the Committee on the Costs of Medical Care, a proposal for a form of standardized medical practice in the United States, leading eventually to state medicine. The medical profession realizes that in voicing his views Mr Kingsbury is simply obeying his master's voice. Mr Alfred G. Milbank himself, in an address recently came out definitely for state medicine as the objective sought. One wonders however, what the governor of Indiana and the health officials of that state will understand when they read Mr Kingsbury's statement that their department of health has been aban-

done. What actually has occurred is a consolidation in the interests of economy and an attempt to bring the medical profession more closely into proper relationship with the public health service. Moreover, there has been the usual resentment by those who have been displaced at those who supplanted them. The evidence thus far available as to the functioning of the department of health of the state of Indiana indicates already a considerable improvement in efficiency in some departments.

These announcements by Mr. Kingsbury emphasize significantly the menace to medical practice inherent in some of the philanthropic interests that have invaded the medical field. Sooner or later these executive secretaries must realize that the right to say how medicine shall be practiced must remain with the medical profession. The type of interference and propaganda promoted by Mr. Kingsbury through the Milbank Memorial Fund is good warrant for the phrases "the curse of philanthropy" and "misguided philanthropy," which have been applied to some of his activities. Perhaps the physicians of this country and public health officials would today be working together more harmoniously and to better effect for the public good had not the situation been confused, muddled and mishandled through demonstrations, publicity and unwarranted propaganda arising from these extraneous forces.

"MEN IN WHITE"

The American stage witnesses, with the opening of this season, what appears to be a remarkable success for a play devoted wholly to a medical subject. "Men in White," written by Sidney Kingsley and produced by the Group Theater in New York, is devoted to life in a hospital. The program itself contains a copy of the Oath of Hippocrates. Briefly, the play concerns a resident physician, a chief of staff, a young woman to whom the resident physician is engaged, a nurse, and numbers of patients, other physicians and nurses whose lives revolve about those of the leading characters. Unlike many other plays devoted to medical topics the drama of this one is so outstanding that it affords not only an insight into the medical point of view but also an intense and interesting evening.

At the very opening of the play the chief of staff in the hospital postpones an operation because he feels that the patient has a good chance for recovery if treated medically. In the library of the hospital there is much discussion among the interns and visiting physicians as to the great advances that medicine has made in recent years and the necessity for continuous reading if one wishes to keep abreast of progress. Incidentally, *THE JOURNAL* occupies a significant place in this library. Gradually the theme of the play develops. The chief of staff, Hochberg, points out to the resident physician, Ferguson, the tremendous demands that medicine makes on the young man who chooses it as a

career. He indicates the need for study abroad and for a long apprenticeship if one wishes to reach the medical heights. There is a significant scene in which a child, given an overdose of insulin, develops the shock associated with hyperinsulinism. The resident recognizes the true condition and prevents the administration of additional insulin, giving an injection of dextrose instead, thus restoring the child to consciousness. There is a glimpse of a physician who made an unfortunate marriage immediately after leaving the hospital and who finds himself, six years later, struggling for a livelihood.

An extraordinary manifestation is the sustained applause by the audience, which, it is reported, occurs at practically every performance, as a recognition of the point of view of the medical profession relative to state medicine. Ferguson has been discussing with Dr. Levine the arduous career of the young man who enters medicine in this modern era.

Ferguson It wasn't much fun but, still I guess it's the only thing I really want to do
(Pause)

My dad used to say—"Above all is humanity!" He was a fine man—my dad. A small town physician—upstate. When I was about thirteen he came to my room one night and apologized because he was going to die. His heart had gone bad on him. He knew if he gave up medicine and took it easy he could live for twenty years yet. But, he wanted to go right on, wanted to die in harness—and he did.
(Pause)

Above all else is humanity. That's a big thought. So big that alongside of it you and I don't really matter very much. That's why we do it, I guess.

Dr. Levine You're right of course! Ah! It's not good—too much suffering! Kills things in you. A doctor shouldn't have to worry about money! That's one disease he's not trained to fight. It either corrupts him or it destroys him.

(He sighs)
Well, maybe some day the State will take over Medicine!

Ferguson Then you'd get politics.

Levine That's the dilemma.

Ferguson Before we let the State control medicine, we'd have to put every politician on the operating table, and cut out his acquisitive instincts.

(Dr. Levine laughs)

Levine That I'm afraid, would be a major operation!

Another remarkably significant scene is a meeting of the board of the hospital in which the medical staff fights off successfully an attempt by the lay board to secure money for the hospital through the manipulation of staff appointments.

Enough has been said to give the medical reader an inkling of the significance of this drama for the presentation of medicine in a proper light to the people. It must not be taken for granted that all the scenes show all physicians as demigods; instead, they are shown as human beings, some of them with failings which physicians, along with other people, sometimes reveal. But the play ends on a high note in which Ferguson accepts the call of his career as above family, friends and even his personal desires.

Current Comment

THE DOCTOR PRESCRIBES SHOES

According to some independent investigations made by a leading physician in the orthopedic field, there are listed in a shoe trade registry for 1932 a total of 189 trade names for shoes with the designation "Dr" as a part of the name. Here, obviously, is an attempt to capitalize a medical background in promoting these wares. The title "Dr" attached to the shoes would seem to indicate that they have been especially designed by a physician for certain types of foot weakness or malformation, whereas in the vast majority of cases the shoes were probably designed by a shoe manufacturer who then secured the consent of some unwary physician to the use of his name. Following the publicity accorded to the Canadian Mahlon Locke, the shoe sections in department stores in many parts of the country featured Mahlon Locke shoes, and advertisements in the newspapers suggested to readers the possibility of relief from arthritis by the wearing of this brand. Since every foot differs from every other one it should be at once apparent that no shoe constructed according to a standardized type could be quite adequate for any deformed or weakened foot. The specialist in orthopedic surgery is likely to prescribe supporting pads, braces or splints according to the conditions he finds after careful study, any other apparatus can be but a makeshift. It is to be hoped that the leaders in the boot and shoe manufacturing industry will, in developing their code for this industry, pay special attention to this type of misleading promotion. Moreover, physicians, particularly those specializing in orthopedics, should be aware of the manner in which their names may be misused in such a connection and avoid the possibility of having their names carried to posterity on the arches of some shoe rather than by their scientific contributions to the literature of their specialty.

THE BLOOD PRESSURE IN THE CORONARY ARTERIES

There is no part of the circulation more important than that in the coronary vessels. The fact that these vessels supply the heart with its nutrition and have irreplaceable functions owing to the circumstance of representing terminal arteries places these coronary structures in the forefront of interest to the clinician. More than two centuries ago it was assumed that the coronary orifices are occluded by the semilunar cusps during systole. If this were true, the circulation in the coronary system might be quite different from that elsewhere dependent directly on the cardiac systole. Thanks in particular to the investigations of the Harvard physiologist W. T. Porter the view became firmly established at the beginning of the present century that the systolic diastolic or mean pressure existing in the surface branches of the heart are practically the same as those in the aorta. About three years ago doubts were again expressed by European investigators. These conjectures have now been dispelled by Wiggers

and Cotton,² cardiologists at the Western Reserve University Medical School in Cleveland. Pressure pulses were simultaneously recorded from the aorta and either from the central end or from a lateral branch of the anterior descending ramus of the left coronary artery of the dog. The records, secured by the elegant modern technic using optical manometers, gave no indication that the pressure relations or form of the coronary pressure pulse are modified by any factor except the pressure changes in the aorta. The minor changes noted are such as occur in other branches of the aorta. An important phenomenon of cardiac function is thus again firmly established.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 8:55 to 9 a. m., central standard time, over Station WBBM (770 kilocycles or 389.4 meters).

The subjects for the week are as follows:

October 31 Your Child's Teeth
November 2 Rickets

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

November 4 St. Vitus Dance

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Southern California Medical Association—The fall meeting of the Southern California Medical Association will be in Los Angeles, November 3-4. The following program will be presented:

Dr. William W. Roblee, Riverside: The Bleeding Pregnant Uterus.
Dr. Andrew B. Wessels, San Diego: Frontal Lobe Abscess.
Dr. Alfred J. Scott, Jr., Los Angeles: Prophylaxis and Treatment of Certain Acute Infections in Children.
Dr. William D. Sansum, Santa Barbara: One Thousand Cases of Diabetes: Treatment with Higher Carbohydrate Diets.
Dr. John M. Askey, Los Angeles: Intuitory Cachexia (Simmonds Disease).
Dr. Clifford A. Wright, Los Angeles: Hemophilia.
Dr. David G. Christ, Los Angeles: Early Diagnosis and Treatment of Gout.
Dr. A. Bennett Cooke, Los Angeles: Practical Observation Based on 800 Thyroidectomies.
Dr. William Clifford McKee, Los Angeles: Hypertension and Pregnancy.
Thomas Hunt Morgan, L. I. D.: Prudent Heredity and Its Influence on the Practice of Medicine.
Dr. Hugh F. Freidell, Santa Barbara: Medical Management of Gall Bladder Disease.
Dr. Rafe C. Chaffin, Los Angeles: Illustrating a New Operation for Prudentia.
Dr. Merrill W. Hollingsworth, Santa Ana: New Concepts in the Treatment of Syphilis.
Dr. Thomas Addis, San Francisco: Diagnosis and Treatment of Bright's Disease.
Dr. Paul B. Roen, Los Angeles: Practical Dietetics.

COLORADO

Society News—Dr. John Ruhrh, Baltimore, spoke before the Medical Society of the City and County of Denver October 3 on poliomyelitis. Speakers before the Boulder County Medical Society at Longmont October 12, included Drs. Arnold

¹ Hochrein M. and Cr. W. Arch. f. exper. Path. u. Pharmacol. 100: 11, 1911.

² Wiggers C. J. and Cotton F. S. Studies on the Coronary Circulation. I. The Coronary Pressure Pulses and Their Interpretation. Am. J. Physiol. 106: 9 (Oct.) 1933.

Minnig, Denver, on "Practical Application of Endocrines in Medicine", Richard W. Whitehead, Denver, "Laboratory Experiments in Endocrinology," and John Andrew, Longmont, "Malignant Tumor of Mediastinum"

DISTRICT OF COLUMBIA

University News—The monthly faculty seminar in George Washington University School of Medicine was presented by Dr. Earl B. McKinley on 'Etiology of Encephalitis with Particular Reference to Experimental Work on the Recent St. Louis Epidemic'—Prof. George Barger of the School of Medicine of Edinburgh gave the first lecture of the Smith-Reed-Russell series at George Washington University School of Medicine October 3, he spoke on 'Ergot and Ergotism' He also held a seminar on "Newer Developments Concerning Hormones"

FLORIDA

Sentenced for Selling Marajuana Cigarets—Augustine Regalado, Tampa, the first person to be convicted in Hillsborough County of selling marajuana cigarettes in violation of the new state narcotic laws, was sentenced in criminal court to a year in the county jail, newspapers reported, October 6 His conviction was on a sale, August 2 and two other cases against him on alleged sales, July 27 and 31 were held in abeyance All the charges were made at the instigation of officials of the state health department, who appeared as witnesses

GEORGIA

Personal—Dr. Thomas H. Hancock, Atlanta, was presented with a forty year service pin by the Georgia Power Company, September 1 He is chief surgeon for the company—Dr. Donald T. Rankin, Milledgeville, has been appointed a member of the state board of medical examiners, succeeding Dr. Henry W. Birdsong, Athens, resigned

Society News—Dr. Daniel L. Seckinger, Atlanta, among others, discussed the treatment of malaria with atebim (an amino-acridine derivative) before the Tri County Medical Society (Calhoun, Early and Miller counties) in Blakely, September 20—Speakers before the Fifth District Medical Society in Atlanta, October 5, included Drs. Olin S. Cofer, on 'Treatment of Procidencia Uteri by the Vaginal Route', Daniel C. Elkin and James C. Sandison 'Experimental Hemothorax', James S. McLester, Birmingham, Ala. 'The Neurotic Patient,' and John Shelton Horsley, Richmond, Va., 'The Pressing Problem of Cancer of the Stomach'—Dr. Mark S. Dougherty, Jr., presented a paper on amebiasis before the Fulton County Medical Society, September 21, and Dr. William C. Waters, Jr., a clinical talk on 'Respiratory Disturbances Due to Food Allergy' Dr. Carl C. Aven, Atlanta, gave a paper before the society, October 19, on 'Unique Thoracic Morbid States Simulating Ordinary Clinical Syndromes'

ILLINOIS

Society News—Dr. Richard B. Cattell, Boston, discussed cancer of the rectum before the Peoria City Medical Society, October 17—Dr. Thomas B. Knox, Quincy discussed medical economics before the Greene County Medical Society, September 8, and Dr. Lee O. Frech, Decatur, the cost of medical care and the patient's ability to pay—At a meeting of the Crawford County Medical Society, Robinson, October 12, Dr. Herbert N. Rafferty, Robinson, spoke on acute osteomyelitis—Dr. Horace Kent Tenney, Jr., Madison Wis. discussed vomiting in the new-born before the McLean County Medical Society in Bloomington, October 10, and Dr. Lewis C. Scheffey, Philadelphia 'Gynecologic Problems of Interest to the General Practitioner'—Dr. William R. Cubbins, Chicago, addressed the Will-Grundy County Medical Society, Joliet, October 25 on intestinal obstruction—A clinic for the handicapped children of the county was conducted by Dr. Philip H. Kreuscher, Chicago, October 26 under the auspices of the Whiteside County Medical Society

Chicago

Personal—Dr. Edward F. Dombrowski has been placed in charge of Dunning State Hospital—Dr. Arno B. Luckhardt was elected an honorary fellow of the American College of Dentists in August He was also granted an honorary LL.D. degree by his alma mater, Conception College, Conception, Mo.—Dr. Abel R. Larrain has been appointed Peruvian consul in Chicago succeeding George Chavarri, resigned

INDIANA

Society News—Dr. John H. Warvel, Indianapolis, discussed diabetes before the Elkhart County Medical Society at Napanee October 5—At a meeting of the Fountain-Warren County Medical Society in Perrysville, October 5, Dr. Dudley T. Dawson, Danville, Ill., spoke on treatment of nervous and mental diseases—Dr. George W. Crile, Cleveland, addressed the Muncie Academy of Medicine in Muncie, October 3 on 'Treatment of Neurocirculatory Asthenia, Peptic Ulcer, Diabetes and Epilepsy by Denervation of the Adrenal Glands'—A symposium on advances in medicine was presented before the Clinton County Medical Society, in Frankfort, September 7, by Drs. Theodore A. Dykhuizen, Carroll A. Burroughs, Indianapolis, Robert A. Hedgcock and Bruce A. Work—Drs. Willis D. Gatch, George S. Bond and Thurman B. Rice, all of the University of Indiana School of Medicine, spoke before the Lake County Medical Society in Hammond, September 14, on etiology, diagnosis and treatment of peptic ulcer, angina pectoris, and the "Indiana plan," respectively—Dr. Albert M. Snell, Rochester, Minn., addressed the Tippecanoe County Medical Society at Lafayette, October 12, on 'Common Diagnostic and Therapeutic Problems of Hepatic and Biliary Disease'—Dr. William Muhlberg, Cincinnati, among others, addressed the semiannual meeting of the Union District Medical Association at Brookville October 26, on "Medical Impairments from the Insurance Viewpoint"

IOWA

Physicians and Dentists Meet—The Pottawattamie County Medical Society and the Council Bluffs Dental Society held a joint meeting in Council Bluffs, September 21, with more than 100 in attendance The principal speaker was H. D. Coy, D.D.S., Hamburg, past president of the Iowa State Dental Society, whose subject was "The Relationship Between the Medical and Dental Professions" A symposium on focal infections was presented by the following

Dr. Harry N. Boyne, Omaha, Focal Infection in the Mouth
Dr. Sydney D. Mauden, Council Bluffs, Focal Infection in the Sinuses and Tonsils
Dr. Gerald V. Caughlan, Council Bluffs, Focal Infection in the Genito-Urinary Tract
Drs. Wenceslaus Stech and Eugene B. Flersch, Council Bluffs, End Results of Focal Infection

Society News—Dr. Chevalier Jackson, Philadelphia, will address the Linn County Medical Society, October 31, on common diseases of the larynx from the points of view of the pediatrician and the general practitioner—The Austin-Flint Cedar Valley Medical Society was addressed, October 4, among others, by Drs. Howard L. Beye, Iowa City, on fractures, Robert D. Mussey, Rochester, Minn., obstetrics, and John C. Shrader, Fort Dodge, heart ailments The principal speaker at the evening session was Richard E. Scammon, Ph.D., Minneapolis, on the origin and early history of St. Bartholomew's Hospital of London—At a meeting of the Lee County Medical Society in Fort Madison, September 28, the speakers included Dr. George D. Jenkins, Burlington, on "Transurethral Resection of the Prostate"—Dr. Samuel J. Lewis, Columbus Junction, presented a paper on "Embolism of the Popliteal Artery" before the Louisa County Medical Society, September 14—The Madison County Medical Society was addressed in Winterset, September 11, by Dr. Dwight C. Wirtz, Des Moines on 'Delayed Union or Nonunion of Fractures'—Dr. Arnold L. Nelson, Winterset, demonstrated his method in the care of compound fractures of the digits—Dr. Clarence W. Baldrige, Iowa City, spoke before the Scott County Medical Society in Davenport, September 5, on "Functional Diseases of the Gastro-Enteric Tract"—The Tama County Medical Society heard Dr. Royal F. French, Marshalltown, discuss hospital work in India at its meeting in Toledo, September 8

LOUISIANA

Health at New Orleans—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended October 14, indicate that the highest mortality rate (182) appeared for New Orleans, and that the rate for the group of cities as a whole was 99 The mortality rate for New Orleans for the corresponding week last year was 149, and for the group of cities, 102 The annual rate for eighty-five cities was 108 for the forty-one weeks of 1933, as against a rate of 111 for the corresponding period of the previous year Caution should be used in the interpretation of these weekly figures, as they fluctuate widely The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate

MARYLAND

Survey of School Children—A survey of children in public and private schools in Baltimore is being conducted by Dr Humphrey Warren Buckler, at the request of the health commissioner of Baltimore. An average of 400 students are being examined daily by twenty physicians and 100 nurses.

Society News—The Baltimore City Medical Society heard a program presented by staff members of the Johns Hopkins University School of Hygiene and Public Health, October 20, as follows: Raymond Pearl, Ph.D., "The Inheritance of Longevity"; Dr Wade H. Frost, "Epidemiology of Diphtheria," and Elmer V. McCollum, Sc.D., "The Mineral Elements in Nutrition."

Laboratory Demonstration—Mr C. A. Perry, chief, bureau of bacteriology, state department of health, gave a demonstration of laboratory procedures used in the diagnosis and control of communicable diseases at a special meeting of the Carroll County Medical Society, recently. The use of the darkfield outfit in the diagnosis of syphilis, the proper method of swabbing a throat for cultures for diphtheria and of submitting the specimens for examination and the most effective method of collecting blood for agglutination tests were among the procedures demonstrated. The request from the society for this demonstration followed an inquiry made by the bureau of bacteriology into the use being made of laboratories by private practitioners. According to the bulletin of the state health department for October, similar demonstrations are planned for other county societies.

MASSACHUSETTS

Ether Day—The eighty-seventh anniversary of Ether Day was observed at the Massachusetts General Hospital, Monday, October 16. In the principal address of the day, Dr Leroy M. S. Miner, dean, Harvard Dental School, paid tribute to W. T. G. Morton, a Boston dentist, as the discoverer of the anesthetic. At the time of Morton's demonstration, it was not generally known that Dr Crawford W. Long, Atlanta, had previously used ether in an operation. The "Ether Dome" where Morton held his exhibition, is still preserved in the old main building of the hospital.

Graduate Courses—October 13 marked the opening of the first of a series of graduate courses to be given in Haverhill. Drs Chester M. Jones and Richard H. Miller, assistant professors of medicine and surgery, respectively, Harvard Medical School, Boston, directed the first course on practical medical principles. The courses will be given on successive Fridays and will cover the following subjects: vascular disease, arthritis, medical and surgical emergencies, syphilis and dermatology, gastro intestinal disease, pathologic pregnancy, vaccine therapy, diabetes and vitamins, and cancer.

MICHIGAN

Society News—Dr George A. Kamperman, Detroit spoke before the Oakland County Medical Society in Pontiac October 19, on "Toxemias of Late Pregnancy."—The Lenawee County Medical Society heard Dr Clarence H. Westgate, Morenci speak on the anemias October 10.—At a meeting of the Kalamazoo Academy of Medicine, October 17, Dr James H. Hutton, Chicago, spoke on "Clinical Applications of Recent Progress in Pituitary Physiology and Preparations."—Dr Wingate Todd Cleveland, spoke on "Royal Mummies" before the Wayne County Medical Society, Detroit, October 16. The surgical section of the society conducted a symposium on burns, October 23 as a memorial meeting to the late Dr Edward C. Davidson, who developed the tannic acid treatment for burns.—At a meeting of the Maimonides Medical Society in Detroit, October 17, Drs Solomon G. Meyers and David J. Sandweiss gave a resume of the recent advances in gastro enterology.—Dr William J. Stapleton Jr. Detroit addressed the Livingston County Medical Society at Howell, October 6, on malpractice.

MINNESOTA

Southern Minnesota Meeting—Dr Monte C. Piper, Rochester, was chosen president of the Southern Minnesota Medical Association at its annual meeting September 26 succeeding Dr Rasmus V. Williams Rushford. Vice presidents elected are Drs Sidney A. Slater, Worthington and Warner G. Workman Tracy and secretary-treasurer Dr Harold C. Haben Rochester. Lloyd A. Whitesell of the University of Minnesota was awarded the \$100 prize for the greatest proficiency during his senior year and Harold F. Buckstein now

an intern at Receiving Hospital, Detroit, was given a medal for proficiency during his senior year. Speakers included Drs William J. Mayo, Rochester, Walter A. Fansler, Minneapolis, surgical treatment of hemorrhoids, Samuel A. Weisman, Minneapolis the shape of the chest in health and tuberculosis, Tobias L. Birnberg, St. Paul, eczema in infancy and childhood, and Charles J. Plonske Faribault, psychology and treatment of fear. The Redwood-Brown Counties Medical Society acted as host and Dr Albert Fritsche, New Ulm was toastmaster at the banquet. Dr Walter H. Valentine, Tracy, was voted a medal for the best paper, an address on gunshot wounds in the abdomen.

MISSISSIPPI

Children to Be Tuberculin-Tested—School children of Clarksdale will be tested for tuberculosis, according to the state board of health. When needed, follow-up physical examinations and roentgenograms will be made. Each year, the board reports, several children in the Clarksdale schools develop active tuberculosis. Dr Mildred S. Fatherree, Sanatorium local physicians and the Coahoma County Health Department will cooperate in the work.

MISSOURI

Health Department Takes Over Milk Station—The Kansas City Health Department has taken over the Mother's Milk Station, Kansas City, effective September 16. Since its establishment in the Kansas City General Hospital in 1929 by the hospital committee of the Woman's City Club, the station has been operated by the club, with the cooperation of the Jackson County Medical Society. During the four and one half years of its existence, it has distributed 24,894½ ounces of milk, and 132 infants have been referred by fifty-five physicians.

Society News—At a meeting of the Jackson County Medical Society, Kansas City, October 24, speakers were Drs Herbert J. Rinkel, on "Migraine and the Relation of Allergy," and Edward J. Curran, "Migraine from the Standpoint of the Ophthalmologist."—Dr Albert M. Snell, Rochester, Minn., addressed the Kansas City Academy of Medicine, October 20, on "Differential Diagnosis of Conditions Associated with Jaundice."—Dr Louis L. Williams, Jr., of the U. S. Public Health Service discussed the "Possible Relation of Insects to Encephalitis" at a meeting of the Academy of Science of St. Louis, October 11.—The Kansas City Tuberculosis Society observed its twenty-fifth anniversary, October 4. Dr Stuart Pritchard, Battle Creek, president of the National Tuberculosis Association, was the guest speaker on "Newer Trends in the Tuberculosis Field."

MONTANA

Society News—The Montana Academy of Ophthalmology and Otolaryngology was addressed recently at Anaconda by Drs Howard C. Naffziger, San Francisco, and George W. Swift, Seattle on neuro otology and neuro ophthalmology, respectively.

NEBRASKA

Omaha Clinical Assembly—The Omaha Mid-West Clinical Society will hold its first annual assembly, October 30-November 3 at the Paxton Hotel, Omaha. Mornings will be given over to general assemblies and afternoons to clinics, with three evening meetings and daily luncheons at all of which guest speakers will be present. Following are the guests, with their subjects:

Dr Joseph C. Birdsall Philadelphia Diagnosis and Treatment of Renal Infections. Diagnosis and Treatment of Urinary Calculi.
Dr James T. Case Chicago Normal and Pathologic Motor Physiology of the Colon. Diagnosis of Chronic Obstruction of the Small Intestine.
Dr Wells P. Egleston Newark N. J. Infection of the Petrous Apex and the Sphenoidal Base and Its Relation to Streptococci and Pneumococci. Meningitis. Immediate Past and Immediate Future of the Practice of Medicine in a Large Eastern City.
Dr Hugo Ehrenfest St. Louis Birth Injuries of the Child. Pregnancy Complicated by Extraneous Disease.
Dr James B. Herrick Chicago Clinical Recognition of Coronary Thrombosis. Individualization in the Practice of Medicine.
Dr Julius H. Hess Chicago Present Status of Serum Therapy in Pediatrics.
Dr Richard H. Jaffe Chicago Leukemia. Sudden Death from Natural Causes.
Dr Dean Lewis Baltimore President American Medical Association. Soft Part Injuries Occurring in Fractures. Surgical Problems.
Dr Lewis John Pollock Chicago Neurology and General Medicine. Some Neck and Labyrinthine Reflexes.
Dr Edward H. Skinner Kansas City And the Doctor Is Still with Us.
Dr Kellogg Speed Chicago Knee Joint Injury Exclusive of Fracture. Fractures of the Neck of the Femur.
Dr Frederick D. Weidman Philadelphia Commonly Misunderstood Features About Cutaneous Cancer. Dermatology is Down to Date.

In addition there will be intensive lecture courses by Omaha physicians each day from 11 to 1 o'clock until Friday, when the entire session will be devoted to clinics in St. Joseph's, University of Nebraska and Omaha-Douglas County hospitals. Scientific exhibits will also be part of the program, including a fresh pathology exhibit furnished by the departments of pathology of the University of Nebraska and Creighton University schools of medicine.

NEVADA

State Medical Election—Dr Edward E. Hamer, Carson City, was chosen president-elect and Dr David A. Smith, Mina, was installed as president of the Nevada State Medical Association at the annual meeting at Las Vegas in September. Drs Julius N. Van Meter, Las Vegas, and Walter H. Frolich, East Ely, were elected vice presidents and Dr Horace J. Brown, Reno, secretary. The next annual meeting will be held in Reno.

NEW YORK

Society News—Dr Burton T. Simpson Buffalo, addressed the Broome County Medical Society, Binghamton, October 3, on "Responsibility of the Practicing Physician in the Control of Cancer."—Dr Howard M. Clute Boston addressed the Medical Society of the County of Montgomery Amsterdam October 4 on carcinoma of the colon and rectum.—Drs George M. Gelser and George W. O'Grady, Rochester, addressed the Ontario County Medical Society recently on "Trichomonas Vaginalis Vaginitis."

Lectures on Physical Therapy—Dr Richard Kovacs New York, is presenting a series of lectures on physical therapy before the Medical Society of the County of Niagara at Niagara Falls, under the auspices of the committee on public health and medical education of the Medical Society of the State of New York. The first two were on "Heat Measures Following Diathermy" and "Low Frequency Currents Electrodiagnosis, Massage and Exercise," given October 17 and 24, respectively. The third will be on "Ultraviolet Radiation Therapy in Medical Conditions," October 31, and the last, "Physical Therapy in Surgical, Gynecological and Other Conditions," November 7.

A Village for Delinquent Boys—A state training school for delinquent boys with a medical unit for the study of their behavior was dedicated at Warwick, October 15. The \$2,000,000 building project now includes thirty-two finished buildings, with two more still to be constructed. The school is a self-contained village where the boys will receive regular school work and vocational training. The Columbia University Medical Center is cooperating in a medical psychiatric study to determine methods of rehabilitating these boys for society. Dr Frederick Tilney, professor of neurology and neurologic anatomy, is chairman of the medical board which has been conducting clinics for the children for the past year. About 300 boys are already settled at the school. Its capacity is 500. Teachers College of Columbia University is collaborating in the educational program and the state is now seeking advice of business men concerning the occupational future of the boys, according to Dr Tilney in his address at the dedication. There will be a resident staff and a visiting staff which will include specialists in various branches of medicine, dentists, surgeons, psychologists and social workers. Acute medical and surgical emergencies will be cared for at the school hospital or at the medical center in New York.

New York City

Hospital News—The Society of Eye-House Surgeons of the Manhattan Eye, Ear and Throat Hospital held a two day reunion September 22-23. The program included clinics and demonstrations at the hospital and a dinner at the New York Physicians Club. Dr Walter Guernsey Frey, Jr., is secretary of the organization.

United Hospital Fund Report—The fifty-six hospitals comprising the United Hospital Fund of New York spent \$25,132,175 in 1932 and received from patients \$17,508,920 according to the annual report made public, October 17. The report stresses the economies made by the hospitals during the financial emergency. Continuous studies are being carried on of methods of reducing maintenance expenses. Henry J. Fisher is president of the fund and Homer Wickenden, general director.

Society News—Drs Frederick S. Wetherell Syracuse, and Gabriel Tucker, Philadelphia, addressed the Medical Society

of the County of Kings, October 17, on "Relief of Pelvic Pain by Sympathetic Neurectomy" and "Bronchoscopic Observations of Postoperative Pulmonary Complications," respectively.—Dr Edward H. Dennen gave an afternoon lecture before the Medical Society of the County of Queens, October 20, on "The Application of Forceps."—Dr Laurence David Redway addressed the October meeting of the American Stomatological Association, October 25, on "Color-Recording of Clinical Pathology with Special Reference to the Eye."

Visit of Brazilian Physicians—Seventeen Brazilian physicians recently visited New York under the auspices of their government to study medical institutions of the United States. A program was presented in their honor at the New York Polyclinic Medical School and Hospital, September 27, comprising surgical demonstrations, inspection of the hospital and a luncheon. The New York chapter of the Pan-American Medical Association also gave a reception at Rockefeller Center, September 26, at which speakers included Sebastian Sampaio, consul general of Brazil in New York, Enrique Ruiz, consul general of Mexico, and Dr Willard C. Rappleye dean, Columbia University College of Physicians and Surgeons.

NORTH CAROLINA

District Meeting—The Ninth District Medical Society held its annual meeting in Mooresville, September 27, with the following scientific program: Drs Clarence C. Craft, Hickory, "Blood Chemistry," George W. Taylor, Mooresville, "Endo crines in Gynecological Problems," Angus M. McBryde Durham, "Epilepsy and Convulsions," Oscar L. Miller, Charlotte, "Fractures of the Forearm," and David T. Smith, Durham, "Vincent's Infection of the Mouth and Lungs." After dinner speakers were Drs Isaac H. Manning, Chapel Hill, president, Medical Society of North Carolina, Wingate M. Johnson, Winston-Salem, John Q. Myers, Charlotte, and Frank Howard Richardson, Black Mountain and Brooklyn, N. Y.

OKLAHOMA

New Secretary of State Society—Dr Leonard S. Wilbur, McAlester, has been named secretary-treasurer of the Oklahoma State Medical Association and editor of its official journal to succeed the late Dr Claude A. Thompson, Muskogee.

Fall Clinical Conference—The fourth annual fall clinical conference sponsored by the Oklahoma City Clinical Society will be held, October 30-November 2. Sixteen guest lecturers will attend to give instruction at general assemblies, luncheon and dinner meetings. In addition, more than 100 hours of graduate lectures will be given by Oklahoma physicians. The guests will include:

Dr Dean Lewis, Baltimore, President American Medical Association, Bone Lesions and Differential Diagnosis, Tumors of the Breast.
Dr Harlow Brooks, New York, Angina Pectoris, Rheumatic Fever, Rheumatism.
Dr Morris Fishbein, Chicago, editor THE JOURNAL, Changes in the Nature of Medical Practice.
Dr Alfred I. Folsom, Dallas, Texas, Prostatic Resection, Chronic Bladder Irritation in Women.
Dr Irving F. Stein, Chicago, Practical Consideration of Sterility, Oxyperitoneum in the Diagnosis and Treatment of Tuberculous Salpingitis.
Dr Alan G. Brown, Toronto, Bronchiectasis, Common Errors in Diagnosis and Treatment of Disorders of Childhood.
Dr Elliott P. Joslin, Boston, Diabetes Mellitus and Its Complications.
Dr Everts A. Graham, St. Louis, Diagnosis and Treatment of Carcinoma of the Lung, Surgical Treatment of Bronchiectasis, Hypoglycemia as a Surgical Problem.

Two symposiums will be presented Monday and Wednesday evenings, one on the abdomen by Drs. Byrl R. Kirklin, Rochester, Minn., Isidore Cohn, New Orleans, and Dean Lewis, the other on medical subjects by Drs. George E. Fahr, Minneapolis, Alan G. Brown and Elliott P. Joslin. The annual clinic dinner will be given Tuesday evening in honor of all the guests, with Dr. Fishbein as the principal speaker.

PENNSYLVANIA

Society News—Drs Esten L. Hazlett, Canonsburg, and David N. Ingram, Houston, addressed the Washington County Medical Society, Washington, October 11, on industrial medicine.—Dr William L. Estes, Jr., Bethlehem, was elected president of the Lehigh Valley Medical Society at the annual summer session in August.—Dr Richard P. Custer, Philadelphia, addressed the Cambria County Medical Society, October 12, Johnstown, on "The Reticulo-Endothelial System and Some of Its Diseases."—Dr Gabriel Tucker, Philadelphia, discussed bronchoscopic examinations as guest speaker of the Harrisburg Academy of Medicine, October 17. Dr Benjamin

M Baker, Jr, Baltimore, spoke on angina pectoris, September 19—Dr Jesse L Lenker addressed the Dauphin County Medical Society, Harrisburg, October 10, on pernicious anemia

Philadelphia

Cancer Meeting—The Philadelphia Commission on Cancer will hold an all-day meeting on cancer at the American Oncologic Hospital, November 15. A general meeting will be held in the morning, followed by a clinical conference and separate meetings of the radiologic and surgical and the pathologic divisions. Among other speakers will be Drs William S. Newcomet, on 'Five and Ten-Year Results of Treatment of Nevi and Hemangiomas', Frederick A. Bothe, 'Tumors of the Kidney' and Stephen E. Tracy, 'Technic of Filtration and Intravaginal and Uterine Irradiation'.

VIRGINIA

Society News—Among speakers at a recent meeting of the Southwestern Virginia Medical Society at Wytheville were Drs William W. S. Butler and C. H. Peterson, Roanoke, on 'Recent Developments in Prostatic Resection', Leland E. Starr, D. V. M. Blacksburg, 'Undulant Fever in Man', and Dr Elbyrne G. Gill, Roanoke, 'Bronchoscopy Its Value to the General Practitioner'.—Dr Maxwell E. Lapham, Philadelphia, began the seventh circuit of the graduate course in prenatal and postnatal care sponsored by a joint committee of the Medical Society of Virginia, Medical College of Virginia and the University of Virginia. Centers in which this ten weeks' course will be given are Martinsville, Chatham, Danville, South Boston and Boydton.

WASHINGTON

Society News—Dr John Ruhrah, Baltimore, addressed the King County Medical Society, Seattle, September 20, on polymyelitis. Dr Alson R. Kilgore, San Francisco, was the speaker, October 16, on 'Cancer and Precancerous Conditions of the Breast'.—Dr James Marr Bisailon, Portland, Ore., addressed the Walla Walla Valley Medical Society, October 12, on 'Differential Diagnosis of Postoperative Lung Complications'.—Drs Albert P. Duryee and Herbert W. E. Johnson addressed the Snohomish County Medical Society, Everett, September 6, on 'General Aspects of Cancer' and 'Malignancies of the Genito Urinary Tract,' respectively.

WEST VIRGINIA

Society News—Drs Arthur A. Shawkey, Charleston, and Randolph L. Anderson, Richmond, Va., addressed the Logan County Medical Society, Logan, September 20, on 'The Hyper-tonic Infant' and 'Injuries About the Wrist Joint,' respectively. —Drs Thomas R. Boggs, Baltimore, and J. Ross Hunter, Charleston, addressed a joint meeting of the medical societies of Harrison, Marion and Monongalia counties at Clarkburg, on 'Disturbances of the Heart Rhythm from the Standpoint of the General Practitioner' and 'Radium Therapy in Cancer of the Uterus and Breast' respectively. —A symposium on pediatric subjects was presented before the Cabell County Medical Society, Huntington, September 14, by Drs William Byrd Hunter, who spoke on immunization, Raymond M. Sloan, care of the mentally handicapped, Will D. Herford, nursing service and George M. Lyon, infant mortality.

GENERAL

Dr Rosenau Awarded Sedgwick Medal—Dr Milton J. Rosenau, Charles Wilder professor of preventive medicine and hygiene, Harvard University Medical School, Boston, was presented with the William T. Sedgwick Memorial Medal by the American Public Health Association for distinguished service in public health. The first award of the medal was made in 1929 when it was given to Dr Charles V. Chapin, Providence, R. I. The medal was established in honor of William T. Sedgwick, Ph.D., a former president of the association. (THE JOURNAL, July 13, 1929, p. 127).

Automobile Fatalities in Four Weeks—The bureau of the census, U. S. Department of Commerce, announced that eighty six large cities in the United States reported 706 deaths from automobile accidents for the four weeks ended September 30 as compared with 651 deaths for the four weeks ended Oct. 1, 1932. Most of these deaths were the result of accidents which occurred within the corporate limits of cities although some accidents occurred outside of the city limits. For the fifty two week periods ended Sept. 30, 1933 and Oct. 1, 1932 the totals for all the cities were 8,093 and 8,273 respectively which indicate a recent rate of 21.4 per hundred thousand population.

Thomas Hunt Morgan Wins Nobel Prize—Thomas Hunt Morgan, Ph.D., director, William C. Kerckhoff Laboratories of Biological Sciences, California Institute of Technology, since 1928, has been awarded the Nobel Prize in medicine for 1933, in recognition of his "discoveries concerning the eugenic functions of chromosomes." Born in Lexington, Ky. in 1866, Dr. Morgan graduated from the State College of Kentucky in 1888 and received his doctor's degree at Johns Hopkins University, Baltimore, in 1890. He was professor of biology at Bryn Mawr College, Bryn Mawr, Pa., from 1891 to 1904 and from then until 1928, professor of experimental zoology at Columbia University, New York. Dr. Morgan was president of the National Academy of Sciences from 1927 to 1931 and his literary contributions include 'The Development of the Frog's Egg', 'Regeneration', 'Evolution and Adaptation', 'Experimental Zoology', 'Heredity and Sex', 'Mechanism of Mendelian Heredity', 'Critique of the Theory of Evolution', 'The Physical Bases of Heredity', and 'The Theory of the Gene'. He has written numerous monographs and papers on biologic and embryologic subjects.

Society News—Dr Frederick S. Baldi, Philadelphia, was elected president of the Medical Section of the American Prison Association at the annual meeting in Atlantic City, October 8-13. Dr Edith A. MacLeod, Niantic, Conn., was elected vice president and Dr James L. McCartney, Elmira, N. Y., reelected secretary. —Dr Robert B. Greenough, Boston, was named president-elect of the American College of Surgeons at the annual congress in Chicago, October 12. Dr William D. Haggard, Nashville, Tenn., was installed as president and Drs Charles A. Dukes, Berkeley, Calif. and Roscoe R. Graham, Toronto, Ont., were elected vice presidents. —The National Conference on Rehabilitation of Disabled Persons was held in Chicago, October 8-13. Physicians who addressed the meeting include Drs Earl R. Carlson, New York, on 'Physical Restoration of the Spastic', Fred H. Albee, 'Bone Car-pentry', Henry H. Kessler, Newark, N. J., 'The Kinetic Stump and Appropriate Prosthesis', and Frederick Tice, Chicago, 'The Physician's Viewpoint on Rehabilitation'. Dr Morris Fishbein, Chicago, editor of THE JOURNAL, gave an address at the annual banquet on 'The Doctor in the Program of Rehabilitation'. —Maj.-Gen. Harry L. Gilchrist was elected president of the Association of Military Surgeons of the United States at the annual meeting in Chicago in September, succeeding Dr Ralph C. Williams of the U. S. Public Health Service.

Government Services

Dr Marlatt Retires

Charles L. Marlatt, Sc.D., chief of the Bureau of Entomology, U. S. Department of Agriculture since 1927, retired October 1, having reached the age of 70, September 26. Dr. Marlatt became associated with the department in 1889 and was assistant chief of the bureau of entomology from 1894 till his appointment as chief. He organized the Bureau of Plant Quarantine in 1927 and served as its director until December, 1929. Mr. Lee A. Strong, who was appointed chief of the new bureau at that time, now succeeds Dr. Marlatt as chief of the Bureau of Entomology.

Hospital Positions Available

The United States Civil Service Commission announces an examination for the position of junior medical officer (intern) to fill vacancies at St. Elizabeth's Hospital and other positions requiring similar qualifications. The salary will be \$2,000 a year less a deduction of not more than 15 per cent as an economy measure and a retirement deduction of 35 per cent. A further deduction of \$60 a year will be made for quarters. Competitors will not be required to report for an examination but will be rated on their education and experience. Full information may be obtained from the secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city or from the commission at Washington, D. C. Applications must be filed before November 15.

CORRECTION

Magnification in Photomicrographs—In the article by Dr. A. P. Vastola, THE JOURNAL, July 8, 1933, page 113, appear two photomicrographs. Figure 5 is labeled as having been magnified 125 times whereas the magnification is actually 25 times.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct 7, 1933

Aid for Refugee Scientists

Professor Einstein was the principal speaker at a meeting in London in the Albert Hall to raise funds for the Refugee Assistance Committee. More than 8,000 persons paid for admission and nearly \$500,000 was obtained. The physicist Lord Rutherford presided. He said that four bodies were concerned in relief work for academic and professional workers: the Academic Assistance Council, of which he is president, the International Students Service, the Refugee Professionals Committee, and the German Emergency Committee of the Society of Friends (Quakers). Their object was to collect a fund for the relief of students, university teachers and members of the professional classes. They were working on behalf of all men of science and learning of all countries who had been debarred through no fault of their own from carrying on their specialized work. There was a flood of refugees into other European countries, which were generously giving what help they could. Comparatively few had reached England but the Academic Assistance Council had the names of more than 1,000 teachers of all grades who had lost their posts. Our contribution could not be to provide a refuge for a large number on British territory. It must mainly be financial, combined with temporary refuge at universities and learned institutions for scholars and scientists faced with destitution. Among these are men renowned in every branch of science. The point must be emphasized that there are quite as many Gentiles as Jews. This brings out the point, that, while the Jews as a race are persecuted, the motive of the persecution is political. It is directed against all persons of pacifist or liberal views. Thus the physicist Schroedinger, whom Oxford has been fortunate to secure, is not a Jew. Physicists and chemists predominate among those seeking employment, and it is hoped that the two Nobel prize winners Prof. James Franck of Goettingen and Professor Haber of Berlin, who invented the synthetic process of producing ammonia from the atmosphere will soon find laboratories in this country for further research. So far, 200 of the 1,000 expelled university teachers have been accommodated. Among the countries that have been able to obtain their services are the United States, France, Russia and Spain. Ireland, China and Venezuela, poor as are their resources have offered to provide a home for a few. Negotiations on the subject are pending with the Turkish government. Dr. Hermann Zondek, formerly professor of internal medicine, Dr. Bernhard Zondek, formerly professor of gynecology and obstetrics, and Dr. Samuel G. Zondek, formerly professor of pharmacology at Berlin, have been appointed, respectively, consulting physician, consulting gynecologist and consulting bacteriologist to the Manchester Victoria Memorial Jewish Hospital. The second is known the world over for his hormone test for pregnancy.

Professor Einstein, who spoke in English, expressed his deep sense of gratitude as a man, as a good European and as a Jew. Through its well organized work of relief, the Assistance Committee had done a great service not only to innocent scholars who had been persecuted but also to humanity and to science. It had shown that the British had remained faithful to the traditions of tolerance and justice which for centuries they had upheld with pride. Let them hope that when a historian delivering judgment at some future period when Europe was politically and economically united, would be able to say that in their days the liberty and honor of this continent were saved by its Western nations.

Other distinguished persons, including the bishop of Exeter, Sir James Jeans, Lord Buckmaster, judge of the supreme court, Dr. Maude Royden, the preacher, and Sir Austen Chamberlain, also spoke. Sir Austen said that he was there to make an act of faith and profession of sympathy with people who were suffering for causes which they had hoped had ceased to operate among civilized nations. He could imagine no greater tragedy that could smite learning and art and science than the proscription in the twentieth century of a whole people who had distinguished themselves in the arts and science in every country and through all ages.

The Anti-Noise League

Though formed only a little over a week ago, the success of the Anti-Noise League exceeds expectations. The league has been inundated with hundreds of applications for membership, many of them from prominent persons, such as the chairman of the London county council, members of parliament, magistrates, lawyers, university dons, and professional, literary and business men. Though automobile noises are a great subject of complaint there appears to be no conflict of opinion between the league and motorists generally as to the need to find a remedy. It is only the exceptions among drivers who are offenders. Railway whistles, phonographs, loud speakers, barking dogs, milk cans, rock drills and itinerant musicians also are a nuisance. Lord Buckmaster, who is a member of the committee, intends to move a resolution dealing with the whole subject on the reassembling of the house of lords.

Retirement of Sharpey-Schafer

The veteran physiologist Sir Edward Albert Sharpey-Schafer has retired from the chair of physiology at Edinburgh at the age of 83. His past and present assistants, numbering twenty-nine, have published in his honor a special volume of the *Journal of Experimental Physiology*, consisting of original researches carried out by themselves. There are thirty-two papers, which cover a wide field of interest, and their final editing was placed in Sir Edward's hands. His classic contributions to physiology are daily used by research workers all over the world. To the profession at large and to the public he is best known for his method of artificial respiration, which constituted a great advance on previous methods.

Martyrs to the X-Rays

The list of radiologists in this country who have suffered serious injury, which often proved fatal, because the dangers were not at first appreciated and safeguards were not adopted, is long. One of the most eminent was Dr. Robert Knop, director of the electrical and radiotherapeutic department of the Cancer Hospital, London, editor of the *British Journal of Radiology* and well known as an author of books on radiology. He succumbed to his injuries in 1928. Other victims were Dr. A. Parsons of the Seamen's Hospital, Greenwich, R. G. Blackhall of the London Hospital who lost both his hands, Dr. A. C. Taylor of Peterborough, Dr. J. Hall Edwards of Birmingham whose hands and arms were amputated as the disease spread, Dr. J. Redfern of Manchester, Sir A. D. Reid of St. Thomas's Hospital, T. Dodd one of the pioneers of the use of the X-rays in Newcastle, Alfred Smith, radiographer of the Coventry Hospital who underwent seventeen operations in four and one-half years and died last January, and Dr. Stanley Melville radiologist to St. George's Hospital, who has lost a finger and is in danger of losing more. The latest victim is Dr. W. Hope Fowler consulting radiologist to the Edinburgh Royal Infirmary. From 1901 to 1911 he was assistant medical electrician and from 1911 to 1926 radiologist. Throughout the war he was honorary consulting radiologist to the admiralty and member of the war office X-ray commission. He was a well known writer on his speciality and attended the

last meeting of the British Medical Association after undergoing an operation. He had two fingers of his right hand amputated at different times and last June his right hand. The king conferred on him the commandership of the Royal Victorian Order and warmly praised him for his self-sacrificing labors. He has just succumbed at the age of 57.

The Early Diagnosis of Cancer The Danger of Consulting Quacks

At the opening of a new cancer hospital in Liverpool, Lord Moynehan delivered an address in which he summed up the present position. Much was still being learned regarding the role and the range of radium as a curative agent. But the chief improvement in the control of cancer would come from earlier diagnosis. This would not be possible until physicians and patients learned to recognize the earliest departure from health which gave warning of the advent of cancer. Lord Moynehan spoke earnestly against the credulity of the public and its belief in quacks, who had never yet cured a case. He urged all persons to consult their physicians about doubtful lumps, ulcers or unusual symptoms. He emphasized that cancer attacked a diseased rather than a healthy organ and that there were precancerous conditions that should not be neglected. He did not believe in hereditary predisposition to cancer.

PARIS

(From Our Regular Correspondent)

Sept 13 1933

Results from Use of Electroprexia in France

Apparatus for the application of electroprexia was brought to Paris from America, two years ago, by Mr Philippe de Rothschild, son of Baron Henri de Rothschild, the philanthropist, who presented one to each of three hospitals: his private hospital, the Hôpital de la Salpêtrière and the Hôpital des Aveugles. Dr Auclair, hospital physician, has published a report of his results with this method, in which he employed sometimes diathermic heat and sometimes short wave heat up to 40 and 41 C. The report is long, including a large number of different diseases. The most important was dementia paralytica. The results were essentially the same as those secured by Carpenter and Neyman in America. The improvements concerned chiefly the mental state, without much change in the serum reactions, except when antisyphilitic treatment was given at the same time. Of nineteen patients three were able to resume their previous occupations without any supervision, four showed sufficient improvement to be allowed to live at home under moderate supervision. In combination with antisyphilitic treatment the results show an advantage over malaria therapy, but one does not observe the rapid changes in the serum reactions secured with malaria therapy. Mr Auclair prefers electroprexia to malaria therapy in the treatment of dementia paralytica. He employed the method also in six cases of tabes, securing a slight improvement in two cases and in all cases an arrest of the evolution of the disease after from twenty to twenty-three sittings. The results were much more encouraging in beginning tabes. In one patient who had gastric crises and optic atrophy with progressive diminution of vision the unstable gait and the gastric crises disappeared and the blindness retrograded appreciably. In one patient the Wassermann test which had been negative for years became rapidly positive. In eight cases of Parkinson's disease, six of which were postencephalitic electroprexia produced improvement, influencing particularly contracture and somnolence but affecting the tremors only to a slight extent. It permitted the patients to resume their occupations and allowed them to omit the medical treatment to which they were accustomed. Of three cases of nonsyphilitic myelitis there was an appreciable improvement in two with diminution of the painful contractures

and of the subjective disturbances of sensitivity. In one case there was almost complete disappearance of sphinctral disorders. Two cases of syphilitic myelitis were successfully treated, but antisyphilitic treatment was administered simultaneously. Two cases of multiple sclerosis completely failed to improve in spite of twenty-three separate treatments. Twelve cases of poliomyelitis gave remarkable results, often rapidly. A girl, aged 10 years, affected for eighteen months with paraplegia with total degeneration reaction, in whom the damage appeared permanent in spite of many treatments with radiotherapy, diathermy and galvanotherapy, was able at the end of two months, after twenty-four treatments with electroprexia to the exclusion of all other treatment, to walk with but slight use of crutches.

Dr Auclair undertook experiments on diseases other than those of the cerebrospinal axis. He secured remarkable results in obesity. The losses of weight varied from a few hundred grams to 2 Kg in two hours, with rapid later recovery, provided due attention was given to the diet. It is easy to bring about a loss of 600 Gm at each sitting in a person of average obesity for a period of ten sittings. The greatest success was obtained in treating patients with rheumatism: eighty such patients received treatment. The treatment was applied preferably during intervals between acute attacks in algias of the most diverse types, alkylating arthritis, various forms of monoarthritis, and even arthritis of the hip, polyarthritis and infectious monoarthritis. In nearly all cases he brought about a reduction of pain, an improvement of function and sometimes improvement in the anatomic lesions. There were only seven complete failures, three of which were in patients with low blood pressure, in whom the treatment could not be applied above 38.05 C in the presence of signs of oppression, while two were in persons with a subacute evolution of the disease. He secured good results in the treatment of gout, sciatica and neuritis, even when associated with vertebral arthritis, and particularly in neuralgia, torticollis and lumbago. In persons with high blood pressure a lowering of the arterial tension was brought about, a reduction that could be maintained for months, with great improvement in the general condition. In five cases of arthritis of the lower limbs an improvement was effected, and in one case at the end of a year an almost complete recovery. Auclair mentions also good results secured in the treatment of rebellious migraine, generalized eczema, essential asthma, cirrhosis salpingitis and abdominal adhesions. On the contrary, complete failure was observed in all manifestations of gonorrhea. When applied in two acute cases of urethritis, orchitis developed immediately in each case. The field of application of electroprexia appears to be rather limited.

The Wine Producers of France

The wine producers of France are making efforts to combat the economic crisis and are resorting to many forms of propaganda. They have established many grape supply stations in order to increase the consumption of fresh grapes and, following the example of Italy, have set apart a special week for the promotion of fruits of the vineyard. In the large waiting room at the St Lazare railway station in Paris they have set up a bar where travelers may secure not only fine grapes but also fresh grape juice pressed out in their presence. Furthermore they have called the medical profession to their aid, and in order to bring before the public the merits that they accord to wine they organized a convention of physicians who are advocates of French wines. This convention was held September 8 and naturally at Bordeaux, the center of the wine industry. A considerable number of physicians, chiefly natives of the region among others professors at the faculties of medicine attended the convention and sang the praises of wine.

In reality the economic crisis affecting the wine producers is due chiefly to the fact that France produces, along with

Algeria and Tunisia, much more wine than is needed in a country where considerable quantities of beer and cider are used. Then there is the fact that the export trade has diminished since other countries are struggling with an overproduction. The overproduction concerns chiefly mediocre wines. As for the well known brands emanating from Bordeaux, Bourgogne and Champagne, they have to meet sharp competition in foreign countries. No convention will succeed in getting the French people to drink more wine than they drink already. The government has, in its weakness, permitted all unsold wine to be transformed into alcohol and has agreed to purchase all alcohol so produced. The government has today such large stocks of alcohol on hand that it is compelling the owners of filling stations to mix alcohol with motor fuel in the proportion of 10, 15 and even 20 per cent. The owners of automobiles are complaining bitterly that this defective fuel cuts down their mileage and damages their carburetors. But southern France, whence come the floods of wine, has always had great political influence in parliament. Thus the question of wine has become one of the embarrassing problems of the French government.

BERLIN

(From Our Regular Correspondent)

Sept 11, 1933

Temporary Regulations for Animal Experimentation

A recent letter (*THE JOURNAL*, September 30, p. 1087) announced the new strict regulations pertaining to vivisection. The possibilities of scientific animal experimentation were left for future elucidation. Goring, chairman of the Prussian cabinet on the basis of the conferences between representatives of science and those of the societies for the prevention of cruelty to animals, has now issued interpretations that will remain in effect until a federal law for the protection of animals is promulgated.

"Vivisection" is defined as dissection of an unanesthetized living animal or an operation in which, in the same interventions on man, anesthesia is usually employed. Bloodless animal experiments on unanesthetized animals, which constitute maltreatment, are to be considered as identical with vivisection.

Since serious scientific research, in the interest of the health and life of men and animals, cannot dispense with animal experimentation, it will not be regarded as vivisection if the following conditions have been observed:

Scientific animal experiments may be carried out only in institutes under scientific management, and only on the responsibility of the director of the institute.

Animal experiments may be undertaken only when scientific considerations promise a definite result. They must not be resorted to if, in the field of science concerned, the question at issue has already been clarified.

Scientific experiments are to be carried out in a painless manner, through the use of general or local anesthesia, provided in the opinion of the director, the purpose of the experiment does not exclude anesthetization or the pain involved is less than the discomfort that anesthetization would cause.

In principle, experiments on the higher animals should be avoided. If, however, the purpose of the experiment cannot be satisfied by the use of lower animals, experiments may be carried out also with higher animals. No more animals may be used for the experiment than are necessary for the elucidation of the question involved. Scientific institutes that do not hold a concession under the state, the commune or the municipality must secure ministerial approbation of contemplated animal experiments. Animal experiments for purposes of instruction are permissible only when other methods such as pictures, films, preparations and models do not suffice. These experiments also require the consent of the central authorities having jurisdiction.

Head Professors and Private Practice

In a recent letter it was announced that the Prussian minister of public instruction is planning a reorganization of the system of higher learning, and that it is not impossible that certain rights heretofore guaranteed by contract may be invaded (*THE JOURNAL*, July 3, page 535). The federal minister of the interior and the federal minister of finance have now issued regulations which provide that every form of auxiliary employment for which an emolument is accepted shall be subject to the securing of definite permission. Medical, veterinary and dental officers, including the instructors in public institutions of higher learning are subject to the same regulations as other officers. So far as the situation can be determined at present the head professor in a clinic would not, as formerly, be allowed to attend to a private practice, nor would other physicians holding official posts be able to pursue their previous outside employments. A definitive settlement of the whole question has not been reached and until definite federal regulations have been formulated the supreme federal or state authorities may permit private practice. It is, however, expressly stated that such officers may not participate in *kranken-kassen* practice. Such officers will be asked to serve as arbitrators or medico-legal experts only when public interest demands it or other suitable persons are not available. It is further recognized that any industrial or occupational work on the part of the wife of such an officer must be made known to the proper authorities.

Reorganization of Institutions of Higher Learning

The Baden minister of public instruction who has jurisdiction over the universities of Freiburg and Heidelberg and the polytechnicum in Karlsruhe, has issued an order that provides for complete reorganization of institutions of higher learning in Baden and that will doubtless blaze the way for extensive reforms throughout the reich. According to the order, the rector will be vested with all the prerogatives of the previous senate (the full assembly and the senate council). The rector will no longer be chosen by the members of the faculty but will be appointed by the minister of public instruction (from among the number of head professors) and will be bound by an oath. The rector has the right to appoint, from the faculty body, a chancellor to represent him. The post of rector as established by this decree will date from Oct. 1, 1933. His tenure of office (previously one year) will be determined by the ministry. The tenure of office of the deans and the senators will be determined by the rector. He has the authority to dismiss them at any time, although the right of appeal to the ministry is reserved to the persons so affected.

Centers for the Care and Prevention of Tuberculosis

In 1931, approximately seven tenths of the persons who died from tuberculosis were previously known to the special centers for the care and prevention of the disease. Of the total number of deaths, about four tenths occurred in hospitals and six tenths in the homes of the patients. In nearly one fifth of the deaths in the homes, the hygienic conditions of the dwellings were not free from objections. The social movement for the care and the prevention of tuberculosis had 896 principal centers and 696 auxiliary centers. The work was carried to about 85 per cent of the communes. Performing service in these centers were 253 full-time, 1,051 part-time and forty-three voluntary physicians, 373 female special social workers, 2,493 female general social workers and 628 other persons. The centers had 320 pieces of roentgen apparatus at their disposal. After admitting 285,403 and dismissing 267,261 persons the total number being cared for at the end of the year 1931 was 611,317. Of the new admissions 26.6 per cent were referred by physicians, 18.0 per cent by boards and by insurance agencies, 34.1 per cent were summoned by the centers as being endangered.

by their environment, while 23.1 per cent reported of their own free will. For the domiciliary care of patients, the centers had available 1,475 communal nurses and 9,890 nurses connected with private social work.

Various Types of Pneumonia

Professor Morawitz, clinician, of Leipzig described recently the clinical aspects of the various types of pneumonia, on the basis of a study of ninety cases of croupous pneumonia occurring last winter. The peak of lobar pneumonia coincided with the influenza epidemic in January. The total mortality was 30 per cent. Arranged according to types, the records showed: type I 40 per cent of the cases, mortality 15 per cent; type II 32 per cent of the cases, mortality 30 per cent; type III 15.8 per cent of the cases, mortality 55 per cent; so called type IV remainder of the cases, no deaths. The prognosis varies for the several types. Serum therapy also offers better prospects in types I and II. It is effective only during the first seventy-two hours. Type specific serums give the best results. Determination of the type of pneumococcus is possible within six to eight hours. The mortality of the cases in which serum was employed was from 20 to 40 per cent less than that of the cases in which no serum was used. In all cases, quinine therapy was used in addition. A favorable effect was produced also by the intramuscular injection of calcium salts. Morawitz stated that it was only a matter of time and the preparation of highly active serums before serum therapy would be universally accepted. Observations show that polyvalent serums are less effective. Intravenous injections of serum were not used.

Environment and Crime

The Prussian Association of Medical Officers held recently in Bad Pyrmont its fiftieth annual session. Special attention was centered on two papers on the combating of crime from the points of view of demographic science, hereditary biology and race hygiene, as presented by Dr. Schuett of Wuppertal and Dr. Viernstein of Munich, who believe that there has been a tendency, since the war, to exaggerate environment in influencing the conduct of criminals. They hold that the state must apply new deterrents, for example, public defamation, pillory, banishment, confiscation of property and the whipping post. By prophylactic measures and sterilization lawbreakers with inherited criminal tendencies must be prevented from handing on to posterity their hereditary inferiorities to the detriment of the common weal.

Examination and Adjustment of Medical Fees

Dr. Wagner, commissar of the medical leagues, recently announced that physicians are constantly being reproached for charging high fees for private services. Dr. Wagner emphasized that it is the duty of the physician to keep his fees within the established limits of the recognized fee schedule, in accordance with the nature and the difficulty of the performance, the financial position of the client and the local conditions. Owing to the low level of the economic status of many patients the minimal fees of the fee schedule should be applied often in private practice. In order to forestall these complaints whether justified or not the commissar has ordered that the directors whom he appoints shall examine and adjust the bills of private physicians which are sent to them at his direction by the medical society of the area in question. He reserves the right, on the basis of the expert opinions so rendered to take in every case whatever action seems best under the conditions. The closing sentence of the announcement reads: "In the interest of the medical profession as a whole the medical profession will assume the responsibility of eliminating the conditions within their ranks to which objection has been made, when it is found that there is justification for complaint and will thus avoid intervention by outside parties."

ITALY

(From Our Regular Correspondent)

Aug. 31, 1933

Studies on Biometry

A special study of biometry has been made by the Società fra i cultori delle scienze mediche e naturali of Cagliari, of which Prof. Luigi Castaldi, director of the Anatomic Institute of the University of Cagliari, is chairman. Brai presented a report on the indexes of variability and of correlation of human viscera in relation to external body measurements. From the abundant material collected at Florence by Castaldi and Vannucci, the speaker established that the index of variability is greatest for the spleen and the least for the liver. With regard to correlation, the variability was found to be greater for the liver, spleen and heart with relation to the anteroposterior and transverse diameters of the respective segments than with relation to the height measurements. The weight of the lungs alone showed greater correlation with the height than with the thoracic diameters.

Aromando, Coio-Pinna and Pintus presented an article on the relation between fertility and bodily constitution. They adopted the anthropometric method and used the statistics employed by Boldrini in his study on the fertility of fathers in the province of Padua. The investigators found, in studying the histories of 435 fathers of the province of Cagliari, that those who were short of stature had much fewer children, on the average, than the fathers who were tall.

Cao presented an article concerning the relations between occupation and fertility. He examined the histories of 435 fathers of the commune of Cagliari and divided them into two classes: bourgeoisie and manual laborers. The latter were divided into those doing heavy work and those doing light work. Among the bourgeoisie he found a larger number of tall persons, also among the manual laborers, although there were more short persons than among the bourgeoisie, the tall persons and the persons of middle stature predominated. There were more short persons among those doing heavy manual work than there were among those doing light manual work. With regard to the number of children, the average for the bourgeoisie was slightly under that for the manual laborers. Among the latter there were more tall children than children of short stature.

Lectures in Military Hospitals

In the series of lectures that the army medical corps has been organizing in the military hospitals, Professor Perussia, director of the radiologic institute of the University of Milan, spoke to the army physicians on the difficulties in the interpretation of roentgenograms in trauma of the bone. The radiographic diagnosis of a traumatic lesion may be difficult and may simulate a fracture that in reality does not exist. The speaker exhibited apparatus and described the devices that make possible to the trained radiologist a correct diagnosis in the majority of cases. Professor Perussia discussed the appearance of fractures as evidenced by callous formation, presence of supernumerary bones or of calcifications of the par-articular soft parts, congenital malformations and dystrophies.

In the military hospital of Turin Prof. Luigi Guglianetti, clinical ophthalmologist of the University of Turin, delivered a lecture on eye traumas emphasizing the vulnerability of the eye in modern war, owing to trench warfare. Guglianetti described certain cases of corneal wounds with coloboma iridis or with traumatic cataract and intrabulbar infection. He explained the uses of the giant electromagnet for the diagnosis of intrabulbar metallic foreign bodies and discussed the technical refinements and the indications for enucleation.

The diagnosis and treatment of syphilis constituted the subject of a lecture given by Prof Leonardo Martinotti at the military hospital of Bologna. He said that syphilis is, from the very onset, a septicemia, but at the onset researches on the blood have thus far proved negative. Susceptibility to contagion varies in different persons. The Wassermann test remains of primary importance. The flocculation reactions appear earlier but they are sometimes not specific. In secondary syphilis there may be forms of icterus that precede the appearance of the rash. There may be also acute yellow atrophy of the liver, often overlooked and nearly always fatal. Statistics, and particularly American statistics, show that at this period a high percentage of syphilitic patients have a positive reaction of the cerebrospinal fluid. In recent years, exanthems have been described resembling syphilitic exanthems. The speaker regards them as of an infectious nature and as possibly due to an influenzal virus. Treatment should begin as soon as the diagnosis is made. The best preparation of mercury in use today is mild mercurous chloride. The most potent spirocheticides are those with an arsphenamine base, introduced intravenously. In the late period of syphilis iodine should not be omitted. In neurosyphilis, malaria therapy gives excellent results, especially in dementia paralytica.

Appropriations for Improvements

The cabinet has approved an appropriation of 55,000,000 lire (\$4,400,000) for improvements in university and hospital centers at Padua, Florence and Pavia. The appropriation will cover enlargements and improvements in some of the more important buildings, particularly the clinics and the laboratories, in order that these university centers may be in a position to meet the growing needs of a constant increase in school attendance. The University of Rome has received a special appropriation of 300,000 lire (\$24,000) for the completion and equipment of the Clinica delle malattie tropicali e subtropicali. In Naples, new departments in the Ospedale dei Pellegrini have been established for the aid of mothers. At Perugia, 8,000,000 lire (\$640,000) has been appropriated for the reorganization of the policlinic through the erection of a pediatric clinic, an otorhinolaryngologic clinic and a dermosyphilopathic clinic, various pathologic institutes and a library.

PRAGUE

(From Our Regular Correspondent)

Sept 27 1933

The Selection of Medical Students

Prof B Boucek of Brno collected recently some interesting figures in Czechoslovakia on medical education which show a continuous increase in the number of medical students since 1926. The present number of medical students (over 6,000) was never reached before. He also traced the number of teachers and assistants at the medical schools and found that the teaching personnel had not increased correspondingly. This is more serious because the amount of teaching that must be presented to students is increasing rapidly. Professor Boucek followed further the progress of students during their stay at the medical school. He found that on the average there is one graduation a year among from seven to ten medical students. Only 15 per cent of the students pass the first examinations in the prescribed term. In his opinion, this is due to lack of care in selecting the students before they are admitted. In spite of this slow progress in their studies the number of those who graduate is far above the actual demands of medical practice. At the present rate of about 500 new graduates a year all possible openings for medical practice in Czechoslovakia will soon be filled, and a further increase in practitioners will lead to a lowering of the standard of living among physicians. It would be rational to estimate from time to time how many new medical

students should be admitted to the medical schools according to the actual demand of medical practice. The medical students should be divided among medical schools according to their teaching capacity. A special examination should be required before the admission of medical students, because a bachelor's degree, which is required, does not always qualify students for the study of medicine.

Insurance Societies and Public Hospitals

The present depression forces insurance societies to restrict their benefits to a minimum. The hospital benefit is an item of expenditure to insurance societies which is increasing constantly. The insurance authorities say the main cause is that public hospitals are inclined to prolong the stay in hospital for financial reasons. To obviate this the Central Insurance Institute has issued regulations which indicate how expenditures for hospital treatment can be kept by insurance societies within certain limits. Hospitalization, according to regulations, should not be ordered by the attending physician until it is approved by the chief physician of the insurance body. The regulations divide pathologic conditions subject to hospital treatment under sickness insurance into two groups: cases which require hospital treatment in all instances and those in which only special conditions in a given case make the hospital treatment desirable. Into the first group come all surgical cases and all acute cases endangering the life of the patient. The second group of cases comprises those in which local treatment facilities, bad housing conditions and suspicious circumstances about the origin of the disease make it advisable for the insurance society to entrust treatment to a hospital. Stress is laid on the fact that chronic diseases are not entitled to hospital treatment under the insurance benefit. The insurance bodies are invited to negotiate with the public hospitals for the purpose of making it possible that physicians of the insurance bodies may freely enter the hospital wards to control the physical condition of patients while in the hospitals.

Congress of Sanitary Engineering

A national congress of sanitary engineering and hygiene was held in Prague, September 1-5. The present time was not thought to be opportune for convening another international congress on the same topic, however delegates were present from Rumania, Bulgaria, Yugoslavia, France, Austria and Poland. There were among the participants many physicians, municipal administrators, contractors and manufacturers. The congress deliberated in three sections. The first dealt with city planning, in which chief interest was concentrated on the question of decentralization of cities and the provision of open spaces in large cities. The second section devoted most of its time to modern methods of construction of hospitals. The third section discussed the latest developments in water supplies and industrial hygiene. As a novel problem of sanitary engineering, the protection of cities against airplane attack was presented to members of the congress. Along with the regular program, several excursions were organized during which especially the progress in sanitary engineering of the city of Prague was shown to the visitors. The congress was held under the auspices of the minister of health of Czechoslovakia and of the mayor of Prague. At the same time an exhibit of sanitary engineering was held to show the new devices in this field placed on the market by various firms.

Death of Professor Biedl

Prof Arthur Biedl of the German faculty of medicine in Prague died recently. He is known in America through his research and also personally, for he lectured at the Johns Hopkins Medical School in 1923. He was born in 1869 of a German family in the south of former Hungary and came to Vienna to study medicine. After four years work in various

institutes of the faculty of medicine in this city he became lecturer on experimental pathology and in 1901 professor of the same subject in Vienna, where he lectured for thirteen years, on the death of Prof Ewald Hering, pathologist at the German faculty of medicine of Prague, he became his successor. Since then he had been connected with the Institute for Experimental Pathology of Prague. From the first, he took the stand that the teacher of experimental pathology must have free access to patients. Finally he succeeded in building up a clinic of medical propedeutics in connection with the Institute of Experimental Pathology. His scientific work deals almost exclusively with the problems of internal secretion, his textbook on the subject has been translated into many languages. He was among the first to investigate the pancreatic hormone. He showed clearly that the pancreas discharges its hormone into the lymph. He also studied the thyroid gland, the thymus and the hypophysis. He was at the same time an excellent diagnostician and physician. He was popular as a teacher. His career brought him many distinctions in the scientific world. He was twice dean of the German faculty of medicine of Prague and a member of many scientific bodies. Because of his sympathies for the socialistic movement, he had many controversies even with his colleagues.

The Exchange of Students

Previous letters have reported the close relations that are developing among the physicians of Slavic nations. The Slavic Congress of Physicians, which will meet in Posen, Poland, in September, testifies to these tendencies. There is a federation of Slavic medical students, which arranges an exchange of Slavic medical students during summer vacations. For next year an exchange of assistants is planned between the different Slavic medical clinics. This exchange is facilitated in the case of Poland and Czechoslovakia because the languages are so similar that no preliminary study is needed for those who want to study in either of the two countries.

Marriages

PERRY A MCGINNIS Pressmens Home Tenn, to Miss Evelyn Olivia Esswein of Nashville, at Paragould, Ark, September 16

THOMAS J HUTTON, Powers Mich to Miss Jean L Gordon of Toronto, Ont Canada in Hammond, Ind, September 22

CHARLES WESLEY LETCHER Wilkes Barre, Pa, to Miss Isabelle Menzies Scott at Forty Fort, October 14

RUTH FRANCIS RASMUSSEN to Mr M Rudolph Campbell, both of South Bend Ind, September 30

ERWIN JOHN HABERLAND Milwaukee to Miss Irene Pamperin of La Crosse Wis September 5

JAMES STEWART HUDSON to Mrs Julia Buhl Kugeman both of Grosse Pointe Mich, October 10

GEORGE L MCCORVICK to Miss Victoria A Mason both of Marshfield Wis, September 7

CLOYD F WHARTON Akron Ohio to Miss Lena Zwickel of Anderson Ind, October 12

HAROLD J DVORAK Minneapolis to DR LAURA M FISHER of Philadelphia September 20

RAYMOND J A DALTON to Miss Joan M Lauderdale both of Milwaukee September 23

THEODORE HARTLEY Bradford Ill to Miss Ethel McCarron of Chicago October 10

NEWTON W FAWCETT to Miss Vera Strong both of Starkweather N D August 26

JOSEPH C SPRINGER South Wayne Wis to Miss Rose Bloom of Beloit October 8

VICTOR H CREMER to Miss Delia Mae Goethe both of Toniah Wis August 31

ROBERT T MC CARTY Appleton Wis to Miss Clara Evans of Milwaukee recently

Deaths

John Edward Lane @ New Haven, Conn, Yale University School of Medicine, New Haven, 1903, studied in universities at Gottingen, Berlin, Geneva and Paris, since 1920, member and at one time chairman of the Council on Scientific Assembly of the American Medical Association, member of the House of Delegates, 1918-1924, 1926-1932, and chairman of the Section on Dermatology and Syphilology, 1924-1925, clinical professor of dermatology at his alma mater, 1920-1922, clinical assistant in medicine, 1907-1910, clinical assistant in dermatology, 1915-1916, and clinical instructor in dermatology, 1916-1920, secretary of the Connecticut State Medical Society, 1917-1920, treasurer of the Congress of Physicians and Surgeons of North America, member and past vice president of the American Dermatological Association, past president of the New York Dermatological Society, the New Haven Medical Association and the Beaumont Medical Club, member of the Societe Francaise de Dermatologie et de Syphiligraphie, Paris, chairman of the section on dermatology and syphilis, 1919-1920, New York Academy of Medicine dermatologist to the New Haven Hospital, author of numerous articles on dermatology and history of medicine, aged 61, died suddenly, October 17, of heart disease

Ira Oscar Denman @ Toledo Ohio, Hahnemann Medical College and Hospital, Chicago, 1897, member of the American Academy of Ophthalmology and Oto-Laryngology, fellow of the American College of Surgeons, chairman of the board of health in Charleston Ill, 1903-1907, at one time on the staff of the Toledo Hospital, formerly on the editorial board of *Archives of Physical Therapy, X-Ray Radium*, aged 61, died, September 28 of heart disease

Bernard Francis McGrath @ Milwaukee, Georgetown University School of Medicine, Washington, D C, 1895, Harvard University Medical School, Boston, 1906, formerly dean, professor and director of the department of surgery, Marquette University School of Medicine, member of the Massachusetts Medical Society, fellow of the American College of Surgeons, aged 63, was found dead October 16, in New York, of heart disease

Nathaniel Aldridge Barrett, Decatur, Ala University of Nashville (Tenn) Medical Department 1885, formerly member of the board of education of Birmingham at one time managing director of the Birmingham Baptist Hospital, aged 72 died, September 12, of cerebral softening and hypostatic pneumonia

Claude O Harper @ Fort Worth Texas Tulane University of Louisiana Medical Department New Orleans, 1897, past president of the Tarrant County Medical Society, on the staffs of the All Saints Episcopal Hospital and the City and County Hospital, aged 61 died August 22, of heart disease

Albert Forrest Longeway @ Great Falls, Mont, University of Bishop College Faculty of Medicine, Montreal, Quebec, Canada, 1886, fellow of the American College of Surgeons, at one time secretary of the state board of health, surgeon to the Columbus Hospital, aged 68 died September 4

James S Boyers @ San Diego Calif Baltimore Medical College 1882, Jefferson Medical College of Philadelphia, 1883, member of the Indiana State Medical Association, past president of the state board of health of Indiana, aged 81, died, October 1 of coronary sclerosis and arteriosclerosis

Edward Joseph De Bergue, New Orleans Tulane University of Louisiana Medical Department New Orleans, 1908, member of the Louisiana State Medical Society, for many years member of the state board of health, aged 62, died September 19 in the Southern Baptist Hospital

Eleanora Bennett Saunders, Towson Md, Medical College of the State of South Carolina, Charleston 1907, member of the Medical and Chirurgical Faculty of Maryland and the American Psychiatric Association, aged 48 died September 26 in the Sheppard and Enoch Pratt Hospital

Joseph Connor Joyce, Annapolis Md, University of Maryland School of Medicine Baltimore 1908, member of the Medical and Chirurgical Faculty of Maryland, health officer of Annapolis, aged 48, died September 22 in the University Hospital Baltimore of septic laryngitis

William Cicero Eubanks, Paducah, Ky Pulte Medical College Cincinnati 1892, member of the Kentucky State Medical Association, past president of the McCracken County Medical Society, aged 65 died September 27 in the Illinois Central Hospital of heart disease

Hans Christian Jorgenson, San Diego, Calif., George Washington University School of Medicine, Washington, D C., 1906, member of the California Medical Association, served during the World War, aged 58, died, September 9, of suppurative hepatitis and gallstones

Frank C Studley ☉ Milwaukee, College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1893, medical superintendent of the Shorewood Hospital-Sanitarium, aged 63, died, September 23, at Marinette, Wis., of cerebral hemorrhage

Gerald Harrison Grout ☉ New York, Columbia University College of Physicians and Surgeons New York, 1902 served during the World War, on the staffs of the Roosevelt and the Herman Knapp Memorial Eye Hospital, aged 53, died, September 25

Frank Gleason Fay, Randolph Mass., Long Island College Hospital, Brooklyn, 1884 member of the Massachusetts Medical Society and the New England Society of Psychiatry, aged 74, died, August 31, in the Massachusetts General Hospital, Boston

Frederick A Achey, Lancaster, Pa. University of Pennsylvania School of Medicine Philadelphia, 1886, member of the Medical Society of the State of Pennsylvania, aged 71 died, September 2, in a hospital at Coudersport, of gastric hemorrhages

Louis Henry Enos, Alton, Ill., Hahnemann Medical College and Hospital, Chicago, 1918, member of the Illinois State Medical Society, aged 43 on the staff of St Joseph's Hospital, where he died October 4, following an operation for appendicitis

John Clark Corbus, Jr., Mendota, Ill. State University of Iowa College of Medicine, Iowa City, 1884, member of the Illinois State Medical Society, aged 72, died, September 16, in the Washington Boulevard Hospital, Chicago, of pneumonia

Vernon Vivaldo Talcott, Republican City, Neb. University of Nebraska College of Medicine, Omaha 1917, served during the World War, aged 41, died August 11, of coronary thrombosis, mitral regurgitation and chronic myocarditis

Lizzie Daniel Rose Atkinson, Cambridge, Mass., University of Michigan Medical School, Ann Arbor, 1891 member of the Massachusetts Medical Society, aged 80, died, September 20, of arteriosclerosis and diabetes mellitus

Samuel Kahn, Detroit Baltimore University School of Medicine 1898 member of the Michigan State Medical Society, on the staff of the Evangelical Deaconess Hospital, aged 64 died, September 26, of coronary thrombosis

J Harry Coates, St Louis Barnes Medical College, St Louis, 1904, member of the Missouri State Medical Association, aged 51, died, September 29, in the Barnes Hospital, following an operation for appendicitis

James H Goad, Gary, Ind. Illinois Medical College Chicago 1908 member of the Indiana State Medical Association on the staffs of the Mercy and Methodist hospitals, aged 54 died, September 26, of heart disease

Vincenzo Nuzzo, Chicago Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1902 member of the Illinois State Medical Society, aged 60 died June 7, of cerebral thrombosis and cerebral hemorrhage

John Ward Gardner, Jersey City N J Bellevue Hospital Medical College, New York 1896 member of the Medical Society of New Jersey, aged 60 died October 1, of diabetes mellitus and cerebral thrombosis

Wade Jesse Lane, Marshall, Texas Tulane University of Louisiana Medical Department, New Orleans, 1886 member of the State Medical Association of Texas, aged 73 died, June 13, of cerebral hemorrhage

Charles Jones Gose, Kinderhook, Ill. Missouri Medical College, St Louis 1899 formerly postmaster of Kinderhook, aged 61 died, September 22, in the Blessing Hospital, Quincy of a self inflicted bullet wound

Ora Isaiah Tower, Los Angeles University of California Medical School, Los Angeles 1910 member of the California Medical Association, aged 47, died September 4, in Newport Beach, of angina pectoris

Arthur Lefebvre, Detroit, School of Medicine and Surgery of Montreal Que. Canada, 1894 aged 65, died, September 25 in the Grace Hospital, of dilatation of the heart uremia and prostate hypertrophy

James Constant Reynolds, Lake Geneva Wis. Rush Medical College, Chicago 1870 formerly state senator for many years bank president, member of the school board, aged 84, died, September 3

Arthur Pell, Rye, N Y., Bellevue Hospital Medical College, New York, 1876, aged 80, died, September 27, in the Northern Westchester Hospital, Mount Kisco, of carcinoma of the tongue and larvnx

Henry E Goldberger ☉ Chicago, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903, aged 63, died, September 23, of carcinoma of the bladder

Frank Theodore Noeson, Niobe, N Y., University of Buffalo School of Medicine, 1885 member of the Medical Society of the State of Pennsylvania, aged 71, died, August 29, of pneumonia

Robert S Bole, St Paul, University of Vermont College of Medicine Burlington, 1884 an affiliate fellow of the American Medical Association, aged 73, died, September 16, in St Luke's Hospital

Samuel Melville Wolfe ☉ Wilkes-Barre, Pa., Jefferson Medical College of Philadelphia, 1894 past president of the Luzerne County Medical Society, aged 65, died, October 4, of heart disease

Samuel Black Hall ☉ Clinton, Tenn., Tennessee Medical College Knoxville 1893, past president of the Anderson County Medical Society, aged 69, died, September 30, of cerebral arteriosclerosis

William Hale Currier, Worcester, Mass., Dartmouth Medical School Hanover, N H., 1881 member of the Massachusetts Medical Society, aged 76, died, September 28, of arteriosclerosis

Jerre George Lynch ☉ Los Angeles Cooper Medical College San Francisco 1906, on the staff of the Hollywood Clara Barton Memorial Hospital, aged 55, died, September 18, of heart disease

Joseph Milton Lawson ☉ Sidney, Ill., University of Michigan Medical School, Ann Arbor 1885, aged 75 died September 25 in the Burnham City Hospital, Champaign of cholecystitis

Charles Calhoun Carson, Talbotton Ga. Hospital Medical College Atlanta 1911 aged 47 died September 28 in the City Hospital Columbus of injuries received in an automobile accident

John T Elliott, Rhinelander Wis., Trinity Medical College Toronto, Ont., Canada, 1900 health officer of Rhinelander, aged 62 died September 19, in Merrill, of heart disease

Charles H Reigrod, New York Long Island College Hospital Brooklyn, 1905 member of the Medical Society of the State of New York, aged 62 died, September 22, of heart disease

Henry Alfred Nex, Allegan Mich. Chicago College of Medicine and Surgery 1917 member of the Michigan State Medical Society, aged 40 died, August 22, of acute myocarditis

John C Crilly, Philadelphia University of Pennsylvania School of Medicine, Philadelphia 1886 aged 70 died, September 28 of carcinoma of the liver and diabetes mellitus

William Edwin Carpenter, Tama, Iowa Rush Medical College Chicago, 1895 member of the Iowa State Medical Society, aged 63, died September 27, of heart disease

Charles Wonson Eveleth, New York Harvard University Medical School Boston, 1903 aged 55 died, October 8, in the Presbyterian Hospital of cerebral hemorrhage

Charles Brace Hewitt Hanvey, Berkeley, Calif. McGill University Faculty of Medicine Montreal, Que. Canada, 1883, aged 77 died September 15 of cerebral hemorrhage

E N Lowe, Oxford Miss. Tulane University of Louisiana Medical Department New Orleans 1892 aged 69, died, September 12, of chronic myocarditis and hypertension

Mary Jane Green, Los Angeles Kansas City (Mo.) Homeopathic Medical College 1890, aged 77, died, September 8, of arteriosclerosis and cerebral hemorrhage

David Alexander Rodger, Cowansville, Que. Canada University of Bishop College Faculty of Medicine Montreal, 1897 died, June 17 of coronary thrombosis

Charles William Hollnagel, Chicago Chicago College of Medicine and Surgery, 1913, aged 58 died September 26, of chronic myocarditis and coronary occlusion

Lars Porsenna Solsness, Weymouth, Mass. College of Physicians and Surgeons Boston, 1916 aged 66, died, September 19

William Josiah Fairfield, Denver, Bellevue Hospital Medical College, New York, 1878, aged 80, died, August 30, of cerebral hemorrhage and skull fracture

Charles Joseph Simon, San Francisco, University of Oregon Medical School, Portland 1922, aged 36, died, September 10, of appendicitis and peritonitis

John Robertson Bissell, Tunkhannock, Pa., Jefferson Medical College of Philadelphia, 1891 aged 60, was killed, September 12, in an automobile accident

Robert Harry Daniel, Dallas, Texas, Southern Methodist University Medical Department, Dallas, 1913, aged 58, died, September 28 of coronary occlusion

John Adams Van Valzah, Daytona Beach Fla Medico-Chirurgical College of Philadelphia 1898, aged 66, died, July 27, of myocarditis and nephritis

David Wasserman, Philadelphia Medico-Chirurgical College of Philadelphia, 1910, aged 60, died September 17, of thrombosis of the coronary artery

Foster P Key, Green Cove Springs, Fla., Atlanta (Ga) College of Physicians and Surgeons, 1903 aged 60 died, September 6, of angina pectoris

Charles S Nelson @ Springfield, Ill., Missouri Medical College, St Louis, 1891, aged 73 died September 18, in a local hospital, of pneumonia

Thomas McCullough, Chatsworth, Ont., Canada, Trinity Medical College, Toronto 1884 L R C P, Edinburgh Scotland, 1884, died August 8

Vincenzo D'Elia, New Haven, Conn Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1886, aged 72, died, October 6, of uremia

Frank Henry Russell, Eldred Ill., College of Physicians and Surgeons, Keokuk, Iowa 1888 aged 70 died, September 10, of chronic nephritis

Julia A Ingram, Louisville Ky, Woman's Medical College of Pennsylvania, Philadelphia 1882, aged 81, died, September 23, of heart disease

Amos E Smith, Walkersville W Va., College of Physicians and Surgeons Baltimore, 1909 aged 60 died July 31, in a hospital at Baltimore

Henry Marshall Harrison, La Porte Texas, College of Physicians and Surgeons, Keokuk Iowa 1877, aged 81 died September 22 of senility

Edgar R Borley @ South Bend, Ind., Detroit College of Medicine 1898, aged 62, died October 4 of arteriosclerosis and chronic myocarditis

Thomas A Mitchell, Owensville, Ohio Medical College of Ohio, Cincinnati, 1876, aged 82 died September 25, of cerebral hemorrhage

William Preston Wilson, Onaga, Kan., Kansas City (Mo) Medical College, 1897 aged 61 died August 10, of chronic myocarditis

Cyrus H Leslie, Palmyra Pa University of Pennsylvania School of Medicine Philadelphia 1874, aged 92, died, July 5 of senility

James Hovey Bullard, Los Angeles, Harvard University Medical School, Boston, 1881, aged 77, died September 20, of heart disease

Edmund James Johnstone, Sydney, N S Canada, Bellevue Hospital Medical College New York 1882 aged 75, died July 13

Byron Hodges, Wixandotte Mich., Michigan College of Medicine and Surgery Detroit, 1889 aged 87 died August 16 of senility

J Tressler Ellis, Waverly Ohio Pulte Medical College Cincinnati 1880 aged 76 died September 24, of cerebral hemorrhage

Charles A Loring Smithville Tenn University of Tennessee Medical Department Nashville 1904 aged 67 died in September

William Harris, Philadelphia Baltimore University School of Medicine 1903 aged 78 died September 23 of chronic nephritis

Thomas Alexander Wright Calgary, Alta Canada Trinity Medical College, Toronto Ont 1889 aged 71 died July 28

Ralph Charles Fish Worcester Mass Baltimore Medical College 1894 aged 64 died September 28 of arteriosclerosis

Arthur Thompson Emmerson Goderich Ont Canada Trinity Medical College Toronto 1888 died recently

Bureau of Investigation

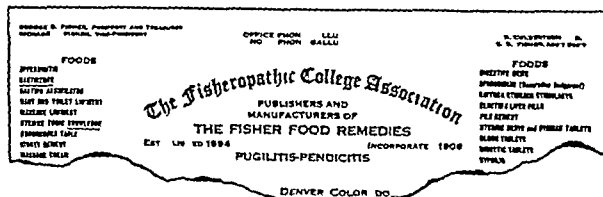
FISHEROPATHIC COLLEGE ASSOCIATION

A Denver Fraud Is Debarred from the Mails

The Fisheropathic College Association is a name applied to a mail-order quack concern having for its president and treasurer George B Fisher, for its vice-president Richard V Fisher, son of George B, and for its secretary Anna L Fisher, sister of George B

George B Fisher is a particularly blatant quack who for years has been exploiting the public. In 1911 Denver newspapers reported that Fisher had been found guilty in the federal courts of sending obscene matter through the mails to the "wives of two prominent Denver business men." It was reported at the time that the judge before whom Fisher was tried gave the quack a scathing arraignment, stating that "a man who was guilty of the practices of which Fisher had been convicted was of the lowest species of humanity and not fit to mingle with decent and respectable people." Papers at the same time reported that some time prior to this conviction, Fisher had been charged with defrauding an aged and infirm woman out of \$15,000 in notes and securities. A suit against him in the District Court according to the same report resulted in these notes and securities being restored to the aged woman.

In 1923 the Department of Agriculture issued a Notice of Judgment declaring Fisher's nostrums ("Uterine Tonic" and "Kidney Food") misbranded under the National Food and Drugs Act. The federal authorities declared the Uterine Tonic misbranded because it was fraudulently represented as an



effective cure for "lack of passion," absence of menstrual flow, cancer of the uterus, gonorrhea and various other conditions.

George B Fisher has claimed to be the "only diagnostician in the world making a chemical and psychological diagnosis." A case was brought to the attention of the Bureau of Investigation some years ago of a young woman unmarried, who was pregnant and who got in touch with Fisher. Fisher diagnosed her case as one of infantile womb, malnutrition, catarrh of stomach, and retroversion. He said that the "bloating" was due to the conditions mentioned and added that the case "suggests a dropsical inclination." He urged her to "lose no time in ordering the \$10 Fisheropathic Home Special."

Fisher has claimed that his "remedies are foods, not drugs." The memorandum of Horace J. Donnelly, Acting Solicitor for the Post Office Department, to James A. Farley, Postmaster General on the Fisheropathic College Association states that while the Fisher group puts out a number of preparations, the principal remedies are "Pugilitis-Pendicitis," "Uterine Tonic Knowledge," "Generative Invigorant" or "Venereal Tablets."

After Dinner Gems," "Sanitary Suppositories" and "Dyscrasia Remedy." It was brought out by the federal investigators that Pugilitis-Pendicitis was mainly epsom salt, with a small amount of baking soda, some citric acid and table salt dissolved in fruit juices flavored with extract of peppermint. The experts for the government testified that this mixture if given in some cases of acute attacks of appendicitis, would be about as dangerous as could be conceived.

The Digestive Gems put out by Fisher were composed of senna, red pepper, table salt, powdered charcoal, glycerin and oil of peppermint. Fisher's advertising declared that his Digestive Gems contained vegetable phosphates which would "eliminate catarrh, heart disease, bronchitis, asthma and various other conditions." They were also claimed to heal cancerous stomachs.

Fisher also sold what he called "Columbine Massage Cream," which he claimed would when applied externally develop the bust, remove wrinkles and freckles, cure eczema, ringworm, prickly heat and shingles, while if taken internally would cure pneumonia, influenza, whooping cough and asthma! The federal chemists found that the stuff was made of mineral oil, white wax and paraffin.

Fisher's Sanitary Suppositories were said to require neither douche nor enema and could be used by men, women and children. They were recommended for rectal or vaginal cancer, blood poisoning, fistulas, inflammation of the colon, prostate and bladder and for various other conditions. The composition of this therapeutic wonder was found by the federal chemists to be our old friend epsom salt put up in gelatin capsules.

A woman who wrote to the Fisher concern was sent a typical symptom blank containing some sixty-seven questions that were to be answered. One of the questions asked was "Are you jealous?" which was answered in the negative. The other replies stated that the patient was born in 1883, that her height was 6 feet 11 inches (11) and her weight 185 pounds, that she had two children living, that she did not know whether or not she had any "brick-dust" in the urine, she had no lumps under the arms or on the breast, groin or neck, that she occasionally sweated at night, that she did not practice self-abuse or the Fisheropathic breathing exercises, had a fairly good stomach, digestion and appetite had no dizziness, was not inclined to vomit, only bloated after eating to excess, that she had occasional pains around the heart that her beverages were water or milk, that she had a good memory, her sleep was refreshing, she had never had a venereal disease, she did not know whether her doctor was a homeopath or an allopath, she had been vaccinated, was not easily prejudiced, was not averse to Christian science and that the medicines she took were those her doctor had given her and that she sometimes used a douche containing a small amount of salt.

In response to this filled-out symptom blank, Fisher diagnosed her case as "most critical and important." He then continued:

The mother of 2 children just past your 50th birthday and still menstruating passing thru the change of life or menopause makes your case not difficult to treat but indicates your whole system is depleted and in need of scientific care. The right ovary is full of inflammation and being so close to the appendix has saturated the whole system with poison and the womb is so low and prolapsed that a constitutional treatment would be wisest and best and most economical. Send at once for the \$15.00 emergency order to be used in the home.

In this order I will include our Dyscrasia Remedy for enriching and purifying the blood. Our PPP for intestinal sanitation.

Our Sanitary Suppositories to be used in the rectum together with other Medications suggestions in Diet and an Exercise for strengthening the walls of the stomach so that the ovaries and appendix may be permanently benefited.

The "Dyscrasia Remedy" was said to contain echinacea. The "other medication" referred to in the quotation was Fisher's "Gastric Assimilator," which was an alcohol-water solution of sugar, fruit juices, citric acid and oil of peppermint.

Judge Donnelly's memorandum also brings out that Fisher's "Uterine Tonic Knowledge," which was advertised as a "scientific oxygenator and tissue builder" was composed of ammonium iodide, a carbonate, glycerine, formaldehyde and spirits of cloves. This was offered as a "perfect deodorant in blood poisoning" and for uterine cancer. It was further brought out that Fisher is not a graduate of any medical school and had in fact, been fined for violating the medical practice act. Judge Donnelly on September 25 recommended to the Postmaster General that a fraud order be issued against the Fisheropathic College Association and its officers and agents as such. On September 26 the mails were closed to this fraud.

Foci of Yellow Fever in South America—In South America, three main foci of the disease are known: the north-west portion of the continent, where there was an epidemic in Morocco, Colombia, in 1929; the eastern states of Brazil where a severe outbreak occurred in Rio in 1929, and the southern tropical regions where there has recently been an outbreak in the war zone of the Chaco. But it is held probable that the disease is endemic throughout the vast area that lies between these known foci.—Still John *J. Roy. Army M. Corps* 61:268 (Oct.) 1933.

Correspondence

SPINAL ANESTHESIA IN HYPERTENSION

To the Editor—So many conflicting statements have been attributed to my remarks in regard to the therapeutic use of spinal anesthesia for the emergency relief of certain types of hypertension (Combined Meeting of the New York Society of Anesthetists and American Society of Regional Anesthesia, Misericordia Hospital, New York, April 11) that I have considered it advisable to make this brief statement preliminary to a series of cases treated by this method which will be reported in detail rather shortly.

The depressor phenomenon of spinal anesthesia, so far as it relates to clinical blood pressure, has long been known to surgeons, in fact, the sudden drop in blood pressure accompanying this type of anesthesia led many surgeons to abandon its use in the early days of its employment.

In a study of some 3,000 spinal anesthesia records made in 1931, several striking and interesting facts were demonstrated, from these, certain observations are permissible. Some drop in both systolic and diastolic blood pressure levels occurred in about 92.4 per cent of all the surgical cases in which spinal anesthesia was employed. This fall in pressure averaged from 10 to 38 mm. of mercury in most of the patients exhibiting no cardiovascular disease. In individuals with high blood pressure levels however, the depressor effect of the spinal anesthesia was more marked, with certain exceptions it was found that the higher the systolic level the greater the fall in pressure. Such drops in systolic levels may be quite extreme, in one instance there was a fall from 260 to 110, while in another it was from 248 to 128. In practically all the cases with a pre-operative systolic level of 220 and above, there was a drop of 50 or more millimeters of pressure.

With these facts in mind, it occurred to me that, while this depressor effect of spinal anesthesia might be undesirable from a surgical point of view, it offered a possible source of therapeutic relief in instances in which a sudden dropping of the systolic blood pressure level was to be desired. Such, for example, are those cases of arterial hypertension approaching the prodromal phase of cerebral hemorrhage, while venous section may at times be life saving in these instances, the secondary anemia frequently associated with this condition may be markedly enhanced by the removal of large quantities of blood. Moreover, the actual fall in systolic blood pressure even with the removal of from 500 to 1,000 cc. of blood is not very great, a drop of from 30 to 50 mm. is perhaps the maximum to be anticipated. Any method, therefore, that will cause a rapid drop of pressure without actual loss of blood volume should be carefully considered.

The first patient treated by spinal anesthesia was a man aged 58, with all the signs and symptoms of an oncoming cerebral hemorrhage, his blood pressure on admission to the hospital was 244 systolic and 120 diastolic. He was given three eighths of the usual dose of spinal anesthesia (Lazarus, J. A., Pick, C. J., and Rosenthal, A. A. *Tropacocaine Hydrochloride in Spinal Anesthesia* *Ann. Surg.* 97:757 [May] 1933) and within twenty minutes the pressure had fallen to 180/110, ten minutes later the figures were 168/105. There were no untoward cardiac signs and within an hour nearly all the previous symptoms with the exception of the posterior headache had cleared up. Blood pressure observations taken every four hours for the next week showed a slow rise in the systolic component to about 210. The patient however, remained free from symptoms for several months. This case was followed by eleven others of the same type and with the same general response.

The indications for this type of emergency therapy are rather clearly defined, in cases of extreme hypertension exhibiting

prodromal signs of oncoming apoplexy and with relative grades of anemia, spinal anesthesia may be life saving. The method is less valuable in cases of obvious cardiac failure, marked edema and dyspnea are definite contraindications.

While I claim no special priority in the adaptation of this undesired complication of surgical spinal anesthesia as a positive therapeutic measure in clinical medicine, I have found no reference to its use in the literature prior to my remarks on April 11.

ALBERT S. HYMAN, M.D., New York

Director, Witkin Foundation for the Study
and Prevention of Heart Disease, Beth
David Hospital

ANOTHER NAME FOR DELIRIUM TREMENS

To the Editor—While visiting in rural Virginia last summer, I came on a new name for an old malady. At least I had not encountered it before. Our Negro cook announced deep concern over the illness of her adult son. She called it 'mannaprocher'. "You know it comes from drinkin'", she said. A brief inquiry as to her son's symptoms showed his trouble to be our old friend the D. T.s.

Of course it immediately suggested itself that the name was a corruption of *mania a potu*. Thinking it possible that this version was personal to the cook, I determined to seek confirmation of its position in the local vocabulary. There was in the neighborhood a Negro of 65 or more, intelligent, well informed and reliable. Under pretext of buying eggs from his wife, I called. While exchanging greetings with him I incidentally asked him if he had ever heard of a disease of the above name.

Yes, he had heard of it all his life. I made him repeat the name, and his version coincided exactly with that of the cook. It came from too much whisky. Folks that had it acted all kinds of foolish ways, and you couldn't do nothin' 'tall with 'em. They ought to be knocked in the head.

I had thought that I was pretty well up on Negro vernacular, but this was a new one on me. Doubtless other readers of *THE JOURNAL* have met with it.

B. M. RANDOLPH, M.D., Charlottesville, Va.

THE ASCHHEIM-ZONDEK TEST IN THE DIAGNOSIS OF HYDATIDIFORM MOLE

To the Editor—Dr. Dabney and associates (*THE JOURNAL*, September 2, p. 771) stress the need of revising the Aschheim-Zondek test in differentiating between hydatidiform mole and threatened or inevitable abortion. The authors correctly quote from *Clinical Endocrinology of the Female*: "Aschheim obtained a positive pregnancy reaction in a case of hydatidiform mole with one twelfth the amount of urine usually necessary to secure such a reaction."

In cases of bleeding during the first trimester of pregnancy associated with disproportionate enlargement of the uterus the patient's urine should be diluted about ten or twelve times with water before it is injected into the test animals.

Lack of emphasis on the phrase "the amount of urine usually necessary to secure such a reaction" is responsible for considerable confusion in the use of the Aschheim-Zondek test in the diagnosis of hydatidiform mole and chorio-epithelioma.

The amount of urine necessary to produce a pregnancy reaction in the mouse or rabbit varies with the term of pregnancy. In very early pregnancy (five or ten days after the missed period) I employ a total of 24 cc. in the immature mouse and from 10 to 20 cc. in the isolated rabbit because the quantity of the anterior pituitary like substance present in the urine at

this stage of pregnancy is no more than a half mouse unit per cubic centimeter. Dr. Dabney's patient was a little more than four months pregnant, the peak of the hormone production. One cubic centimeter of her urine then contained approximately five mouse units of the hormone, enough to give a reaction in the nonestrous isolated rabbit.

In testing for hydatidiform mole, the term of pregnancy must be taken into account. Usually only 1 cc. of the patient's urine is diluted twelve times and injected into an isolated rabbit. Moreover, the twenty-four hour specimen should be employed, as the concentrated morning specimen contains higher values. The original mouse test is more reliable than the Friedman modification, since one can thereby determine accurately the number of mouse units of the hormone present in a cubic centimeter of urine.

Dr. Dabney and his associates obtained a positive reaction with as little as 0.4 cc. of the patient's urine. This may have been due to one of the following factors: An unusually high excretion of the hormone, as suggested by the authors, a high concentration of the patient's urine, or the unintentional employment of an estrous rabbit, which is more sensitive to the hormone than the nonestrous rabbit.

CHARLES MAZER, M.D., Philadelphia

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

CLIMATE AND THE INCIDENCE OF COMMON COLDS

To the Editor—Is it possible for you to tell me what the relative incidence of ordinary colds and their complications is as between the New England states and Florida? An inquiry from a patient of mine is this: "If I take my children to Florida this winter are they less likely to get colds or bronchial disturbances than if they stay in Boston?" Your answer would be gratefully appreciated. JACOB FINE, M.D., Boston.

ANSWER—Since the common cold is of world-wide occurrence, one would expect much authentic information on the relative incidence of common colds in different climates. There are few such reports available, however, and in these the conclusions differ. Popular opinion for centuries has held that the weather is an important influence in the cause of common colds. Hippocrates is quoted by J. G. Townsend (*A Review of the Literature on Influenza and the Common Cold*, supplement 48, *Public Health Reports* 1924) as having written that if the summer be dry and northerly and the autumn rainy and southerly, headaches occur in winter, with coughs, hoarseness, coryzae, and in some cases consumptions, but if the autumn be northerly and dry it agrees well with persons of a humid temperament and with women, but others will be subject to dry ophthalmies, acute fevers, coryzae, and in some cases melancholy. A less remote opinion on influenza was expressed by Noah Webster in 1799 (*History of Epidemic and Pestilential Diseases*, volume 2). He said: "Epidemic catarrh is the disorder which most decisively proves a rapid and universal change in the essential properties of the atmosphere. This disease sometimes invades the human race so suddenly that half the inhabitants of a town or city are seized in a night. It is evident that the disease is occasioned by an alteration in the atmosphere, but it is observable that whenever it appears on the American continent it appears also in the islands of the West Indies. In autumn northerly breezes are experienced in the islands and these produce colds and coughs similar to what we all experience in temperate latitudes on the change of weather in spring and autumn. But these are very different, at least in degree, from a general epidemic influenza, which seizes mankind in all climates with pain in the side and bones, accompanied often with fever. The universality of this disease, bursting suddenly upon all climates and raging with equal violence in all seasons and in defiance of heat or cold leaves us no room to question its dependence on some other cause than changes of weather or application of cold."

W A Wells (Influence of the Atmosphere in the Causation of Colds, *South M J* 18 139 [Feb] 1925) reviewed the statistics of Professor Schade on the German Army covering an analysis of almost three fourths of a million cases of disease of the upper air passages. It was demonstrated that the cases increased regularly with the fall of the thermometer, and that colds were from two to eight times more frequent in winter than in summer. In the excessively cold winter of 1916-1917, the number of colds was three times greater than the number in ordinary winters. A study of the common cold by investigators at Johns Hopkins University has been under way for several years. W M Gafafer (Upper Respiratory Disease [Common Cold] and the Weather, Baltimore, 1928-1930, *Am J Hyg* 13 771 [May] 1931) reported a study by this group of several hundred volunteers, in which an effort was made to determine what relation exists between deviations from "normal" of the weekly upper respiratory attack rates and the deviations from "normal" of each of thirteen weather elements. The period of observation of eighty-two weeks was relatively short. Nevertheless the study strongly suggested that changes in weather during a warm season are probably more frequently associated with disease of the upper respiratory tract (common cold) than changes in weather during a cold season. L I Dublin (One Year of Common Colds and Associated Infections, *Stat Bull Metrop Life Ins Co* November, 1923) presented statistical evidence of a relation between temperature of the outside air and the incidence of colds. He said "A drop in the weekly mean temperature of 10 degrees carries with it an increase of eighteen common colds per week in this group of 6,700 people." D F Smiley (Seasonal Factors in the Incidence of the Acute Respiratory Infections, *Am J Hyg* 6 621 [Sept] 1926) in reviewing the incidence of acute respiratory infections over a twelve year period among students at Cornell University, wrote "There is apparently a definite reciprocal relationship between the incidence of the acute respiratory infections and the mean outside atmospheric temperature." An unusually extensive review of the literature by the Thomsons was published recently for the Pickett-Thomson Research Laboratory of London. In compiling this large volume, the reviewers extracted information from more than 2,000 research papers on the common cold. In chapter XXX is reviewed the literature on the part played by chill in the causation of colds. The authors, who themselves have done careful research on the common cold for fifteen years, do not hesitate to say that the incidence of the common cold is almost entirely a matter of climate and more especially of temperature.

There are however, reports of research on the other side of the question. In a study of the incidence of colds among students at universities located in different parts of the United States, W H Barrow (Group Susceptibility to Acute Upper Respiratory Tract Infections, *THE JOURNAL* Sept 18, 1926, p 920) found at Stanford University in California, where the climate is mild, that practically the same number of students for each hundred investigated suffered from acute colds as did those at Harvard University in Massachusetts where the climate is rather rigorous. Townsend, of the U S Public Health Service conducted a study of a large group mostly of students of colleges and of another group composed of medical officers of the Army, Navy and Public Health Service and members of university faculties. The universities were scattered as far as Boston, New Orleans, Chicago, Tucson, Salt Lake City and Berkeley, and the reports covered a period of more than eighteen months. The incidence of colds at the ten universities was found to be remarkably uniform, there being only two instances, the Salt Lake City group and the Washington group in which the attack rate deviated by as much as 20 per cent from the mean rate of all groups in the same period. Considering the wide difference in climates of the localities represented, the uniformity of attack rate was considered one of the most significant facts brought out by the study, indicating that climate is a factor of much less importance than would be supposed. There was surprisingly little evidence of consistent differences between the localities with respect to incidence rates.

One could go on reviewing the observations and conclusions reported by those who have made special studies on the common cold, but there would still be no general agreement as to the guilt or innocence of climatic factors. The literature on the common cold is chaotic and until order is brought out of this situation the advice given several years ago (*Climate and Common Colds* Current Comment *THE JOURNAL*, Oct 9 1926, p 1218) is still good. The methods for prevention and measures for protection may well be based on common sense hygiene rather than specious theories.

TREATMENT OF HABITUAL ABORTION

To the Editor—A white married woman is desirous of children but has miscarried in each of her two pregnancies between four and five months. Pregnant the first time in 1929 she became very ill with edema of the lower extremities, high blood pressure, headaches and albumin in the urine and passed a macerated fetus during the fifth month. Her second pregnancy occurred in 1933 and although she showed no symptoms at all like the previous time (the blood pressure remained normal and there was no albumin in the urine), nevertheless the fetus died the fourth month and was passed with membranes intact. This occurred four months ago and on examination today I can find no explanation that is completely satisfactory. The age of the patient is 28, the weight 130 pounds (59 kg). Physical examination is essentially negative as is pelvic examination. The hemoglobin is 75 per cent, red blood cells 3,600,000, white cells 8,500. The urine is negative for albumin or casts. The phenol sulphophthalein test for kidney function shows 90 per cent excretion in two hours. The menstrual history is absolutely regular. In the past history the patient states she remembers having swollen feet at the age of 16 which disappeared after the prescription of proper shoes by an orthopedist. At 21 the patient had an attack of tuberculosis which was cured after five months in a sanatorium and has never had any symptoms relative to the old tuberculosis since. To all appearances she looks and feels perfectly well (except for slight anemia). She wants to know whether she has any chance of having a live birth or whether she must stop trying and resign herself to her fate. If she becomes pregnant again is there not some danger of her becoming eclamptic? Are there any further examinations indicated? The Wassermann reaction is negative. I would appreciate any suggestions as to possible etiology or treatment. Please omit name.

M D New Jersey

ANSWER—The fact that the patient has had two miscarriages does not imply that she will have more. Since the patient is only 28 years old there is no harm in suggesting that she wait at least one year after the last miscarriage before becoming pregnant again. In the meanwhile the anemia, which is more than slight, should be overcome by the customary means, including diet and iron and arsenic preparations. A careful examination should be made to try to detect a possible focus of infection in the body. It is unfortunate that the fetus and placenta were not studied bacteriologically, especially because the fetus was obtained in intact membranes in the second pregnancy. Both husband and wife should follow a fairly regular mode of living and build themselves up physically. Their diet should contain abundant fresh vegetables, fruit, calcium, milk and vitamins, especially E.

If the toxemia that was present during the first pregnancy had caused a permanent injury to some organs such as the kidneys, evidence of this would have most likely appeared during the second gestation. Since this evidence failed to appear, there is no reason to believe that a toxemia will necessarily again manifest itself in subsequent pregnancies. However, it is highly advisable to perform more tests of kidney function before another pregnancy supervenes although not infrequently only a pregnancy will reveal latent kidney damage.

When the woman again becomes pregnant she should be seen about once a week, at which time the usual prenatal examinations should be made. In addition the patient should be advised to be inactive during that period of each month when she would have menstruated if she were not pregnant. Intercourse should be restricted as much as possible. It is advisable to prescribe a proper diet and to give iron and arsenic for stimulation of hematopoiesis.

Success has been noted in some cases of habitual abortion by the use of corpus luteum both orally and hypodermically. This therapy is based on the fact that the corpus luteum has a protective influence on the young ovum and a quieting effect on the uterine musculature. If the patient has a thyroid deficiency, thyroid preparations also should be prescribed.

EFFECTS OF SODIUM BICARBONATE IN HYPERACIDITY

To the Editor—A patient of mine suffering from frequent attacks of severe nervous hyperacidity for which alkalis give him but poor relief has been resorting to washing out his stomach every night in order to avoid being awakened by the acute heartburn. He uses sodium bicarbonate and plenty of hot water and is able to achieve a pretty thorough gastric lavage without any strain or the use of mechanical aids. He has no pain and the roentgen examination is negative. I should like to know what deleterious effects if any may result from this practice if long continued. The patient is a middle aged man of normal weight and strength and has no other complaint except a nervous extrasystole. Please omit name.

M D New York

ANSWER—No deleterious effects will ordinarily result from this procedure. It is conceivable that should too large quantities of soda be used and the pyloric sphincter relax, absorption of the soda from the intestinal tract might lead to symptoms of mild alkalosis. This however, is rather remote. Again the continuous use of soda may lead to subsequent increase in the hydrochloric acid response.

IMMUNIZATION METHODS IN HAY FEVER

To the Editor—Can you advise me who may be given the credit for introducing specific vaccines (pollen antigens) for hay fever and in what year?
M D Maryland

ANSWER—Thommen, in the book on Asthma and Hay Fever, by Coca Walzer and Thommen says 'To Noon is due the credit of having been the first to establish the active immunization therapy of hay fever on a practical and scientific basis. His method consisted of the subcutaneous injection of definite quantities of timothy pollen extract the dosage of which he endeavored to control by the ophthalmic reaction. This work, interrupted by Noon's untimely death was carried on by Freeman.'

Noon and Freeman published a report of their results in 1911. Active immunization had been attempted by Dunbar, in 1903, Curtis in 1900, and Scheppegegrell in 1909, but these attempts were abandoned because of the severity of the reactions and the irregularity and uncertainty of the results.

Numerous investigators carried on the work and introduced the use of extracts of ragweed and tree and other pollens as well as that of timothy.

It might be well to mention here that the treatment for hay fever in common usage today consists in giving subcutaneous (or intracutaneous) injections of the extracts of the responsible pollens. The solutions are not vaccines nor are they serums, as no bacteria and no serums are involved.

CHANCES OF SURVIVAL OF PREMATURE INFANT—
URTICARIA IN THE NEW BORN

To the Editor—It is commonly believed by the public that premature infants say of seven months have a lower mortality than those of eight months. Please discuss briefly stating the percentage of mortality in each case. It is also common belief that the erythematous condition with which infants are born or which develops a few hours or days later is hives or bold hives as people call it and that it is essentially necessary for these infants to break out with this condition or else they die. As a result the infants are dosed with teas and the like. Please discuss briefly. I am asking for your views in this matter hoping I may convince some who are wrong. Please omit name.
M D Texas

ANSWER—Every day that a fetus is carried in the uterus under normal circumstances adds to its opportunity for life. This discards any thought that a seven months fetus under ordinary circumstances has anything like the opportunity for life that one has that has been carried eight months. In discussing the possibilities for life in premature infants the facts surrounding the individual premature delivery must be given due consideration. This is especially true of chronic infections in the mother the age of the mother and whether the pregnancy is single or multiple.

In a well regulated institution so called hives or bold hives developing shortly after delivery are exceptional. Such a condition is not uncommon in some of the toxemias of pregnancy but is more often due to the treatment of the skin of the new-born infant either by irritating solutions or by external applications of various medicated oils or ointments. These early irritations are not to be confused with those developing later in infants which may be due to many causes among the most common being toxemias due to ingredients in the mother's milk artificial feeding or underlying factors causing icterus, as well as external irritants.

USE OF CONVALESCENT SERUM IN POLIOMYELITIS

To the Editor—Please inform me whether antipoliomyelitis serum is available to the profession. Is it worth while giving it as long as the patient has fever or must it be used in the first four or five days to be of value? Is the present epidemic of encephalitis in St. Louis supposed to be due to the same or a related virus?

CHARLES C HIXON, M D Macon Ga

ANSWER—Convalescent poliomyelitis serum is available to the profession in different parts of the United States through the establishment of convalescent serum centers either by boards of health or through private endowment. These centers however do not furnish a complete service throughout the entire country.

The opinion of investigators is divided as to the value of convalescent poliomyelitis serum in the treatment of patients with this disease. It is generally agreed that whatever value it might have is greatest when the serum is administered in the pre-paralytic stage. Some investigators believe that once the stage of paralysis has been reached no benefit results from the use of serum. Other investigators on the basis of clinical observation believe that any individual still in the active febrile stage of poliomyelitis should be given the benefit of convalescent

serum treatment. It is believed, therefore, by some that the convalescent serum may inhibit or prevent the progress of the disease but paralysis that has resulted from destruction of nerve cells, of course, cannot be relieved.

The cause of epidemic (lethargic) encephalitis has not been discovered but it is supposed to be a different etiologic agent from the filtrable virus causing poliomyelitis. Because of a similarity in the pathologic changes in the central nervous system in the two diseases, many investigators believe that the causes of these two diseases are similar but not identical.

HERNIA AFTER APPENDECTOMY

To the Editor—What is the best surgical opinion regarding the post operative occurrence of right inguinal hernia following a McBurney grid iron incision as compared with a right rectus incision in which the rectus muscle is split instead of retracted?

JOHN M SIMPSON, M D Marshfield Ore

ANSWER—Griffiths, in 1919, reported eleven inguinal hernias following appendectomy, ten of which occurred on the right side and one on the left. The incision employed for removal of the appendix was of the McBurney muscle-splitting type in all but one case in that one case a right rectus incision was made, and the muscle was retracted instead of being split. These eleven cases occurred among 100 consecutive cases of hernia. The occurrence of the hernia from the date of appendectomy was from a few months to three and a half years.

Roberts reported twenty right inguinal hernias following appendectomy in which a McBurney incision was used. These cases were found among 6000 cases of hernia. Roberts was of the opinion that hernia did not follow a right rectus incision. In other words his opinion was that there is a definite relationship between the McBurney incision and subsequent development of inguinal hernia.

Southam expressed the opinion that injury to the branches of the ileo-inguinal nerve internal to the anterior-superior iliac spine in the McBurney incision is possibly the cause of many inguinal hernias, since it produces paralysis of the muscle and the conjoined tendon around the internal ring. He stated that three patients with right inguinal hernia which followed the McBurney incision were operated on for repair of the hernia and at the same time sections of the ileo-inguinal nerves were removed from the canal. Histologic examination disclosed partial degeneration in two cases.

Adler has also noted that inguinal hernia not infrequently follows appendectomy when the McBurney incision is employed.

Unquestionably, appendectomy is many times carried out through McBurney incision without subsequent development of hernia. Although there is some evidence that inguinal hernia does develop following this type of incision it seems obvious that the McBurney incision may well be used if the function of the ileo-inguinal nerve is not impaired.

KETOCENIC DIET IN BACILLURIA

To the Editor—Can you give me references that will assist me in the question of diet suggestions to secure ketonuria in the handling of a case of severe bacilluria (colon bacillus)? I know that the Mayo Clinic recommends this method of attack but I would like to get more details for a patient who cannot go into a hospital now under a dietitian's management. In other words how to get ketonuria in the ambulatory case?

GEORGE WATT, M D New York

ANSWER—The ketogenic diet in the treatment of bacilluria was begun by Clark and by Helmholz of the Mayo Clinic. It was known that colon bacilli are inhibited from growing in urine at a pH of 4.6 to 5.0 and Barborka suggested that a ketogenic diet would produce urine of such a pH. Investigators at the Mayo Clinic then demonstrated that patients in ketosis do excrete bactericidal urine. Two factors are necessary in the treatment of bacilluria with the ketogenic diet: ketonuria and a low pH of the urine. The bactericidal power of ketonurine does not vary directly with the degree of acidity; however, nor is it due to the presence of diacetic acid or sodium diacetone. Normal urine of pH 4.8 does not have antibacterial powers. Ketonurine of pH 5.7 or higher does not have bactericidal properties. Ketonurine must have a pH of 5.6 or below in order to be therapeutically effective. Acidity in synergy with some substance in ketonurine is believed to be responsible for the bactericidal action. Fuller believed that the principal substance is leucotatory beta-oxibutyric acid.

Bacilluria with colon bacilli is more readily cured by this form of treatment than that with a number of other gram-negative bacilli found in infections of the urinary tract. Sometimes more than one organism is present. The most difficult to eradicate is *Psacillus xerogenes*. In such cases ketonurine of a lower pH (from 4.6 to 5.2) may be necessary. As an aid in

increasing the acidity of the urine, the oral administration of ammonium nitrate daily may be used.

In a series of fifty patients with bacilluria of various types so treated, Clark reported successful results in 66 per cent. The effectiveness of ketonuria has been demonstrated by Helmholtz in cases of pyuria in children with anomalies of the urinary tract that have never responded to other treatment. Sterilization of urine may be accomplished in some cases in from five to ten days. Ketonuria should be useful in the preparation of patients for operations on the urinary tract.

The prognosis varies with the type of organism, the extent of the infection, the amount of renal injury and the ability of the patient to produce hyperacid ketonuria. Failure may result from the patient's inability to digest fat or to excrete its products, thus avoiding ketosis. Alkalinization and dilution of ketonuria will each cause the disappearance of its bactericidal properties. The avoidance of excessive fluids is necessary; a normal intake is permissible. The presence of ketosis is quickly demonstrated by adding from eight to ten drops of a 10 per cent solution of ferric chloride to a few cubic centimeters of urine. If diacetic acid is present, a characteristic dark red color will develop.

The ketogenic diet is exceedingly high in fat and low in carbohydrate. In references listed the general scheme for planning such a diet is considered. The details of this diet can be found in a number of books on dietetics. To obtain satisfactory results a quantitative diet is desirable and the services of a dietitian may be required, at least at first. Although a qualitative ketogenic diet may be used later. The patient's complete cooperation is essential. As the body adjusts itself to the diet ketonuria may lessen to some extent and a temporary return to a mixed diet may be indicated. The diet is apparently harmless, but to avoid any consequences from deficiency of vitamin B, such as pellagra or amenorrhea, a teaspoonful of brewers' yeast is given daily. The value of this diet has been confirmed by Band, Dunlop and Dick and by Fuller, successful results being obtained even in very chronic and intractable urinary infections.

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TOXICITY OF PYROGALLOL AND THIOCARBANILIDE

To the Editor—I am desirous of obtaining information concerning the toxicity of pyrogallol and thiocarbanilide and the possible physiologic effects accompanying a more or less frequent contact with these substances. I am particularly interested in these substances as a source of irritation and occupational disease. Please omit name. MD Texas

ANSWER—Pyrogallol (pyrogallie acid) is a powerful reducing agent. Sollmann's Manual of Pharmacology, 1932, contains the following in regard to its physiologic effects:

Locally it is a mild caustic for wounds and mucous membranes; it produces but slight irritation of the intact skin, passing into erythemas on continued use. Absorbed into the blood it forms methemoglobin, disrupts the corpuscles and leads to intense acute nephritis. Concentrated solutions acting on blood *in vitro* (not in the body) produce a peculiar insoluble substance, hemogallol. Fatal poisoning may occur even when the drug is applied to the intact skin and may set in suddenly after it has been used for some time without effects. The symptoms consist in diarrhea and vomiting, chills, prostration, feeble pulse, nephritis with scant dark urine containing blood or hemoglobin derivatives (Neisser 1881), sometimes icterus and glycosuria. The rapid cases show cyanosis, dyspnea, convulsions and collapse.

A case of fatal poisoning in a patient treated with an ointment containing pyrogallol (percentage not known) is reported in the *Pharmaceutical Journal* (London), Sept. 26, 1925, page 396. Pyrogallol is a constituent of some hair dyes; its potential harmfulness when so used is pointed out in a query and minor note in THE JOURNAL, July 8, 1922, page 152 and in the paper of H. N. Cole, *The Dermatoses Due to Cosmetics*. THE JOURNAL, June 14, 1924, page 1909.

Much less information is available with regard to thiocarbanilide. This substance, also known as sulphocarbanilide (*a-b* diphenyl thiourea) is used in the rubber industry. A paper on the health hazards of numerous chemicals used in the rubber industry, including thiocarbanilide, was published by R. S. Quinby in the *Journal of Industrial Hygiene*, 1926, page 103. An article by P. A. Davis (*Rubber Age* 1930, p. 305)

states that thiocarbanilide is not poisonous itself, though its decomposition products are toxic.

The query and minor note entitled "Possible Poisoning from Well Known Rubber Curing Accelerators" (THE JOURNAL, Sept. 15, 1928, p. 822) discusses the conditions under which thiocarbanilide may produce deleterious results.

A comprehensive classification of the materials used in the rubber industry and their hazards to health was recently published by the National Safety Council, "Compounding Materials Used in the Rubber Industry," Industrial Safety Series, no. 1, Chicago, National Safety Council, 1931.

LIVER GROWN

To the Editor—What is the trouble in the so-called popular name known as liver grown in infants after being shaken up by a wagon ride? Please omit name. MD Pennsylvania

ANSWER—The term "liver grown" is an obsolete expression and was formerly used to designate enlargement of the liver. The liver may be enlarged in infants in a variety of conditions such as sepsis or specific infectious diseases, or in congenital syphilis, miliary tuberculosis, malaria and tropical leishmaniasis, echinococcal disease and other parasitic infections. Associated with icterus the liver may be enlarged in congenital atresia of the bile duct, catarrhal and epidemic icterus, familial icterus gravis and congenital hemolytic icterus. Associated with blood diseases as leukemia, severe secondary anemia or von Jaksch pseudoleukemia infantum, the liver may be enlarged as well with lipid metabolic disturbances as Gaucher's disease and Niemann-Pick's lipid histiocytosis. Rarely in an infant a cirrhosis as a portal or Hanot's type, may cause liver enlargement.

Tumors of the liver in infancy are uncommon, though both sarcoma and carcinoma are known to occur. Hemangio-epithelioma, which may involve an extensive area of the liver, may cause a great enlargement of the organ. Thus the liver of an infant may be enlarged from a variety of causes. What etiologic importance may be attached to such a popular malady as "liver grown" in an infant who has been shaken by a wagon ride could hardly be logically deducted.

TREATMENT OF SYPHILIS

To the Editor—On page 731 of THE JOURNAL for August 26 there appears a query as to the prophylactic use of arsphenamine in an individual who had been exposed to syphilis from four to five weeks previously. Whether prophylactic arsphenamine is ever justifiable is a debatable point. If it is used it is certainly of no value if given later than forty-eight hours after the suspected exposure. In the situation outlined by your inquirer only two proper courses are open: first to observe the patient at weekly intervals or oftener for the appearance of possible lesions which should be examined promptly in the dark field if and when they occur and at the same time to follow the patient with weekly Wassermann tests for a minimum period of three months. It has been repeatedly demonstrated that under the circumstances outlined by your inquirer infection with syphilis is not inevitable and that some such exposed individuals will escape.

The second alternative is to treat the patient as if he had seronegative primary syphilis, namely, with a minimum of nine months of continuous treatment involving at least three courses each of an arsphenamine and bismuth. Anything less than this amount of treatment and in particular the four or five prophylactic doses advised in the answer may merely suppress the infection instead of eradicating it, leave the patient open to the possibility of the subsequent development of cardiovascular syphilis or neurosyphilis and certainly should not free either the patient or the physician from anxiety. JOSEPH E. MOORE, MD, Baltimore

COMMENT—The first sentence in the reply was an error, an unwarranted concession to the opinions of others. The rest of the answer, however, is in accord with Dr. Moore's opinion, though less emphatically stated.

TREATMENT OF CANCER

To the Editor—What medication if any in addition to the use of high voltage roentgen therapy may be used with some promise of benefit in retarding the growth of inoperable carcinoma? Please omit name and address. MD Wisconsin

ANSWER—X-rays and radium remain the only demonstrated and accepted methods in the treatment of inoperable cancer. The benefit that can be derived from these agents depends on numerous factors, the most important of which are the radio-sensitivity of the tumor and the extent of the disease. For many years intense efforts have been made to develop constitutional remedies for the treatment of these conditions. In general these efforts have failed. Recently there has been some evidence that the internal administration of barium gluconate has effected favorably a growth of inoperable cancer. These results are still new so that their real value awaits confirmation.

HYPERTENSIVE HEART DISEASE WITH
DECOMPENSATION

To the Editor—A man aged 45 came to my office complaining of dyspnea of one year and six months duration. He states that he has had similar attacks of dyspnea in the past but not as frequent as in the last year and a half. The dyspnea is now persistent and becomes worse on exertion. He has to use three pillows at night. He coughs and the expectorations are scanty. On physical examination the following positive conditions were noted. The man was dyspneic and apparently in distress. The left border of the heart was about 2 cm outside the mid clavicular line. The heart otherwise was normal. The pulse was 100. The blood pressure was 230 systolic 160 diastolic. The lungs were resonant but there was diminished breathing in both bases with numerous rales heard both on inspiration and on expiration. The rales on expiration were sonorous. The rest of the physical examination was negative. The urine presented a trace of albumin. The specific gravity was 1.010 (mid-afternoon specimen). The Wassermann reaction was negative. I am now planning a nonprotein nitrogen and a dilution concentration test. Two specimens of sputum were obtained for tuberculosis and also a chest plate. What would you suggest in the line of treatment? Patients with asthmatic bronchitis and bronchiectasis obtain relief by the use of ephedrine sulphate by mouth. Would this be contraindicated in view of the markedly elevated blood pressure? Would syrup of calceosore be contraindicated? I understand that calceosore is a phenol derivative and one should think of the effect on the renal function. Any suggestion will be helpful. This man has worked hard all his life. Please omit name.

M D Massachusetts

ANSWER—It would seem that the primary diagnosis in this case must be hypertensive heart disease with decompensation. In a patient of this age with the heart and urinary conditions as mentioned, a diagnosis of so called malignant hypertension is suggested particularly in view of the negative Wassermann reaction. The nephrosclerotic element may be determined by the dilution concentration test and the nitrogen retention and an examination of the eyegrounds would be of value.

Assuming this diagnosis to be correct, the cough and dyspnea would be largely caused by the pulmonary congestion, and this should be attacked by the use of the theobromine compounds or the acid base salts with, perhaps, an occasional mercurial diuretic. Any of the theobromine compounds are satisfactory, but theobromine calcium salicylate or the alkaloidal theobromine is probably the least nauseating. Ammonium nitrate or ammonium chloride are the acid base salts of choice.

Ephedrine sulphate would probably be no more effective than the remedies mentioned and there is evidence to suggest that a damaged heart does not well tolerate this drug. Syrup of calceosore is not contraindicated but its effectiveness here is extremely doubtful.

BURNING SENSATIONS IN LIMBS AFTER HEMIPLEGIA

To the Editor—Two years ago a man aged 50 suffered a hemiplegia on the right side which was treated with favorable results. At present he suffers from hot sensations of the upper right extremity. He describes the feeling as that of fire starting from his right fingers up to his right shoulder. This feeling makes him uncomfortable and sometimes interferes with sleep. It varies in intensity with intervening periods of relief. My examination disclosed a slight degree of mental unbalance and slurring speech though he answers questions intelligently. He is depressed and worried, reports his answers and seems to be melancholic. The Wassermann reaction is negative. The pupillary reaction is normal. The knee jerk is increased. White and red blood counts are normal. The basal metabolism rate is normal. No spinal puncture has been made. The blood pressure is 160 systolic 85 diastolic. The patient can make use of the previously paralyzed limbs. Electrical treatments and iodides have been given without any relief from the hot sensation or hyperesthesia. Kindly suggest treatment that will benefit this patient's abnormal sensation. Please omit name and address.

M D California

ANSWER—When a patient with partial hemiplegia complains of burning sensations of the kind here described it is practically certain that his brain lesion involves the optic thalamus. Treatment is unsatisfactory but in many cases the disagreeable sensations gradually become less troublesome. Hydrotherapy and electricity in some form may be useful and a combination of a bromide and tincture of hyoscyamus may be of some symptomatic value.

HYPERESTHESIA IN DIABETES—HYPERTENSION

To the Editor—1. What medication would be of service in the treatment of the hyperesthesia accompanying diabetes mellitus complicated by a slowly developing Parkinsonism? 2. Might the persistent finding of a systolic blood pressure of 135 in an otherwise healthy man of 22 prognosticate hypertensive disease in later life? Will you please omit name.

M D New York

ANSWER—1. The answer to this question would depend on the state of the diabetes. If the hyperesthesia was due to persistent glycosuria and hyperglycemia, dietetic measures along the usual lines of the treatment of diabetes are indicated. If on the other hand the hyperesthesia is part of the Parkinsonian syndrome it might be wise to employ some doses of scopolamine. The probabilities are that the hyperesthesia is due to diabetes.

2. A persistent systolic blood pressure of 135 in a man aged 22, indicates that for the time being at least the patient has a tendency to hypertensive disease. Whether this means the development of hypertension later in life is another story, depending a great deal on what the cause of the present status is. Cases are known of hypertension occurring in young adults which completely disappear later in life. It would seem that the ultimate outcome would depend to a certain extent at least on heredity and the family history of the individual. If he belongs to a hypertensive family the outlook would be more grave than if this is an isolated instance with a normal family history.

SENSITIVITY TO EUPHORBIA

To the Editor—At present we have three patients suffering with a dermatitis produced by *Euphorbia marginata*, a plant commonly known as mountain snow. We were unable to find reference in the literature to any skin manifestation produced by this plant. Can you give any information regarding such a dermatitis?

M D Wisconsin

ANSWER—*Euphorbia* is a large genus of which more than a hundred species are found in this country, some cultivated, the wild ones partly indigenous, partly imported. Authorities state that the juice of all of them is irritating to the skin. Known as spurge, parts of some varieties were formerly used as emetics but have been discarded as too irritating. The gum resin of one *Euphorbia resinifera* from Morocco, was incorporated in plasters and used for prolonging suppuration. Quacks used the juice of these plants for the treatment of warts and freckles. Erysipelatous pustular and phlegmonous dermatitis even gangrene, has been produced by the juices of these plants.

It is therefore no surprise to find seven species, among them *Euphorbia marginata* listed in Weber's list of skin irritants (*Arch Dermat & Syph* 21 763 [May] 1930). Ten tropical species are listed.

SPINA BIFIDA OCCULTA

To the Editor—I delivered a primipara at full term. Delivery was spontaneous. On the third day post partum the baby suddenly became cyanotic. With carbogen the cyanosis cleared. A roentgenogram was taken to determine atelectasis. This proved negative but coincidentally it was noticed that only the right half of the second lumbar vertebra was developed. The left was missing and distal to this there was an angulation of the spine of about 30 degrees. Will nature fill in the gap? How soon should treatment begin if necessary? Where can I find reports of similar cases in the new born? Kindly omit name.

M D New York

ANSWER—The condition here described is probably a spina bifida occulta. As there is no mention of paralysis of the lower extremities or loss of sphincter control, the spinal cord is probably normally developed. A defect in the bony structure of the lumbar vertebra may have to be remedied by orthopedic measures at a later stage of the child's development, if a considerable degree of kyphosis or spinal deformity persists. The eventual outcome, of course, is dependent on the extent of the bony defect.

The following articles may be of help in this case.

- Sachs, Ernest. Surgery of the Head and Spine in Alts' Pediatrics Philadelphia W. B. Saunders Company 7 154 161 1925.
Frazier, C. H. Surgery of the Spine and Spinal Cord New York D. Appleton & Co 1918.
Albee, F. H. Original Surgical Uses of the Bone Graft Surg Gynec & Obst 18 699 1915.
Trout, H. H. Spina Bifida Tibial Transplant Father to Child Surg Gynec & Obst 20 523 1915.

IRREGULAR MENSTRUATION

To the Editor—A woman aged 23 has menstruated only two or three times a year since the menses appeared at the age of 14. These periods last only one day and there is a very small flow. She also has a very obstinate case of constipation and colitis and is slightly underweight. Her condition otherwise is excellent. She has been examined by several competent gynecologists all of whom report no pathologic changes. Please advise me about treating this case (with preparations similar to aminotriantoin or progynon). Please omit name and address.

M D Iowa

ANSWER—The fact that a woman menstruates only two or three times a year does not necessarily indicate that she is ill. She is not entirely normal because normal young women menstruate at much more frequent intervals, usually twenty-eight days apart. She may be further abnormal in that most likely ovulation occurs only two or three times a year and therefore her chances of becoming pregnant are less than those of other women. However this conclusion does not necessarily follow because ovulation may occur without menstruation just as menstruation may take place without ovulation. Therefore there is no need to give this woman any special treatment.

other than measures to overcome her constipation and colitis. Amniotin, antuitrin and progynon are expensive preparations which must be given over long periods of time. They do not always produce uterine bleeding and even when they do the flow of blood is not always the same as true menstruation. There is really nothing to be gained by making a woman bleed at more or less regular intervals by means of estrogenic preparations except that she may feel better psychically. Furthermore, these preparations should be used with great caution because harm may result. In certain animals, injection of these substances has resulted in sclerosis of the ovaries, diminution in size of the anterior pituitary, hypertrophy of the posterior pituitary, hyperplasia of the thyroid and other changes.

HYPERPLASIA OF PROSTATE

To the Editor—A man aged 65 in good health weighing 170 pounds (77 kg) has never used alcohol. He is well preserved and not senile. He had syphilis forty-four years ago and has had mercuric rubs and iodides at various intervals for a number of years. He had gonorrhea twenty-one years ago but did not have proper treatment. He has had prostatitis and cystitis for fourteen years and complains of a burning sensation in the prostate and urethra which is worse when he voids. I have been treating him for a year with massage, irrigation with potassium permanganate, diathermy and experimental gland therapy. The gland was enlarged to 50 mm or more and I have reduced it nearly half. I have catheterized him several times just after he has voided and found a drachm or a drachm and a half (from 4 to 6 cc.) of urine. He objects to cystoscopy or any operation. The urine has had blood in it three different times but is clear most of the time. Once in a while it may be a little cloudy. The urine is free from albumin and sugar; the specific gravity is 1.020. I have never given instillations of silver nitrate or urinary antiseptics by mouth. I have several cases that are similar. If the patient voids every hour the amount will be from 1 to 1½ ounces (from 30 to 45 cc.) two hours 2½ ounces (75 cc.) three hours from 3½ to 4 ounces (from 100 to 120 cc.). What am I going to do with these patients that refuse operations? Please omit name.

M D Colorado

ANSWER—The patient under consideration probably has a prostatic hyperplasia with additional inflammatory changes. An exact diagnosis, especially tracing the source of the occasional hematuria, could not be established except by cystoscopy. When a patient refuses any instrumentation, some valuable information may be gained by making a cystogram. As a contrast fluid for filling the bladder before roentgenography a nonirritating solution should be chosen such as 10 per cent neosilol solution or any of the compounds used in intravenous urography. In instances in which hyperplasia and inflammatory changes are coexistent and surgical intervention is not to be considered one is obliged to resort to methods that furnish a fair chance for the relief of the subjective symptoms. Fractional roentgen treatments combined with protein therapy are apt to answer this demand. In oldish persons whose heart might not withstand the use of foreign protein, autohemotherapy should be given the preference.

AMBLIOPIA IN PREGNANCY

To the Editor—Is it possible to get an acute toxic amblyopia from pregnancy without evidence of an acute nephritis?

M H Newton MD Little Falls N Y

ANSWER—Pregnancy per se does not lead to an acute toxic amblyopia. As the query implies in practically all cases of amblyopia during gestation there is an associated nephritis or toxemia. Of course, amblyopia may appear during pregnancy after excessive use of wood alcohol or tobacco just as it may occur in nonpregnant individuals, but this has nothing to do with the pregnancy itself.

PIGMENTATION OVER TIBIA

To the Editor—Can you suggest anything that might remove the copper colored spots traumatic which so often happens over the flat surface of the tibia? Please omit name.

MD California

ANSWER—If small, they may be removed surgically, but this is seldom advisable. No peeling treatment is apt to succeed. Hemorrhage occurs readily in this region in many people and any irritation might increase it, thereby increasing the pigmentation.

EFFECT OF IODIDES ON WASSERMANN TEST

To the Editor—During the administration of iodides in the treatment of syphilis is there an iodine saturation effect on the blood lipoids that affects the blood Wassermann test?

CHARLES C HINTON MD Macon Ga

ANSWER—No. The iodides do not affect the Wassermann test in any way.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY Oral New York Dec 15-16 Sec Dr C Guy Lane 416 Marlboro St Boston
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Written (Group B Candidates) The examinations will be held in various cities of the United States and Canada Dec 9 Application necessary before Nov 1 Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh
AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 Sec Dr William H Wilder 122 S Michigan Blvd Chicago
AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha
ARIZONA Basic Science Little Rock Nov 6 Sec Mr Louis E. Chuer 701 Main St Little Rock Regular Little Rock Nov 14 Sec Dr A S Buchanan Prescott Homopathic Little Rock Nov 14 Sec Dr Allison A Pringle Durck Springs Eclectic Little Rock Nov 14 Sec Dr L L Marshall 401 W 3d St Little Rock
CALIFORNIA Reciprocity Los Angeles Dec 6 Sec Dr Charles B Imbrium 420 State Office Bldg Sacramento
CONNECTICUT Regular Hartford Nov 14-15 Endorsement Hartford Nov 24 Sec Dr Thomas P Murdock 147 W Main St Meriden Homopathic New Haven Nov 14 Sec Dr Edwin C M Hall 82 Grand Ave New Haven
DELAWARE Wilmington Dec 12-14 Sec Dr Harold L Springer 1013 Washington St Wilmington
FLORIDA Jacksonville Nov 13-14 Sec Dr William M Rowlett Box 786 Tampa
KANSAS Topeka Dec 12-13 Sec Dr C H Ewing Larned
KENTUCKY Louisville Dec 5-7 Sec Dr A T McCormack 532 W Main St Louisville
MAINE Portland Nov 14-15 Sec Dr Adam P Leighton Jr 192 State St Portland
MARYLAND Regular Baltimore Dec 12-15 Sec Dr Henry M Fitzhugh 1211 Cathedral St Baltimore Homopathic Baltimore Dec 13-14 Sec Dr John A Evans 612 W 40th St Baltimore
MASSACHUSETTS Boston Nov 14-16 Sec Dr Stephen Rushmore 144 State House Boston
NATIONAL BOARD OF MEDICAL EXAMINERS The examinations will be held at centers in the United States where there are five or more candidates Feb 14-16 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia
NEBRASKA Lincoln Nov 22-24 Director Bureau of Examining Boards Mrs Clark Perkins State House Lincoln
NEVADA Carson City Nov 6 Sec Dr Edward E Hamer Carson City
NORTH CAROLINA Raleigh Dec 4 Sec Dr B J Lawrence 503 Professional Bldg Raleigh
OHIO Columbus Dec 6-8 Sec Dr H M Platter 21 W Broad St Columbus
PENNSYLVANIA Philadelphia Jan 2-6 Sec Mr W M Denison 90 Education Bldg Harrisburg
SOUTH CAROLINA Nov 14 Sec Dr A Earle Boozer 505 Saluda Ave Columbia
TEXAS San Antonio Nov 21-23 Sec Dr T J Crowe 918 19 20 Mercantile Bank Bldg Dallas
WEST VIRGINIA Morgantown Nov 16-18 State Health Commissioner Dr Arthur E McClue Charleston

Wisconsin June Report

Dr Robert E Flynn secretary Wisconsin State Board of Medical Examiners reports the written and practical examination held in Milwaukee June 27-30, 1933. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. One hundred and six candidates were examined, 99 of whom passed, 3 failed and 4 were conditioned. Twenty-five candidates were licensed by reciprocity and 2 by endorsement. The following colleges were represented:

College	PASSED	Year Grad	Number Passed
College of Medical Evangelists		(1933)	1
Loyola University School of Medicine		(1933)	1
Northwestern University Medical School	(1932)	(1933)	2
University of Illinois College of Medicine		(1932)	1
University of Louisville School of Medicine		(1931)	1
Harvard University Medical School		(1931)	1
University of Minnesota Medical School		(1931)	1
University of Oregon Medical School		(1912)	2
Temple University School of Medicine		(1932)	3
University of Pennsylvania School of Medicine		(1932)	2
Marquette University School of Medicine		(1933)	49
University of Wisconsin Medical School (1928)		(1931)	32
Université de Toulouse Faculté Mixte de Médecine et de Pharmacie France		(1932)	1
Osteopaths *			2
College	FAILED	Year Grad	Number Failed
Osteopaths †			3
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Bennett Medical College Chicago		(1915)	Illinois
Hahnemann Medical College and Hospital Chicago		(1896)	Illinois
Loyola University School of Medicine		(1933)	Iowa

Rush Medical College	(1933)	Iowa
Indiana University School of Medicine	(1932)	Indiana
University of Michigan Medical School	(1916)	Michigan
Univ of Minn Med School (1930)	(1931)	Minnesota
St Louis University School of Medicine	(1930)	Missouri
Washington Univ School of Med (1930), (1931)	(1932 2)	Missouri
University of Cincinnati College of Medicine (1924)	(1933)	Ohio
Univ of Penn School of Med (1929)	(1930)	Ohio
Marquette University School of Medicine	(1929)	Illinois
University of Wisconsin Medical School	(1929)	Oklahoma
Osteopath *	Illinois	Michigan 2 Texas

College	LICENSED BY ENDORSEMENT	Year	Endorsement
Washington University School of Medicine		Grad	of
University of Oregon Medical School		(1931) N B M Ex	
		(1929) N B M Ex	

* Licensed to practice osteopathy and surgery
† Examined in osteopathy and surgery

West Virginia July Report

Dr Arthur E McClue, secretary, Public Health Council of West Virginia, reports the oral and written examination held in Charleston, July 11-13, 1933. The examination covered 11 subjects and included 110 questions. An average of 80 per cent was required to pass. Twenty-three candidates were examined, all of whom passed. Ten physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year	Per Cent
Emory University School of Medicine		(1932)	84
Rush Medical College		(1933)	84.9
University of Louisville School of Medicine		(1932)	87.4 89.9
Johns Hopkins University School of Medicine		(1929)	91.1
University of Maryland School of Medicine and College of Physicians and Surgeons		(1932)	88.5
Harvard University Medical School		(1932)	89.8
New York University University and Bellevue Hospital Medical College		(1932)	87.2
Jefferson Medical College of Philadelphia		(1930)	87.2
Pennsylvania College of Podiatric Medicine		(1932)	86.2
University of Pennsylvania School of Medicine		(1932)	90.4
Medical College of Virginia		(1932)	82.2
	86.4 86.6 87 87.1 87.2 87.5 88 88.9 90.1		

College	LICENSED BY RECIPROCITY	Year	Reciprocity with
University of Arkansas School of Medicine		(1931)	Arkansas
University of Louisville School of Medicine		(1930)	Kentucky
University of Minnesota Medical School		(1927)	Minnesota
Washington University School of Medicine		(1929)	Missouri
McHarr Medical College		(1931)	Tennessee
University of Tennessee College of Medicine		(1931)	Tennessee
Baylor University College of Medicine		(1930)	Texas
Medical College of Virginia	(1909)	(1932)	Virginia
University of Virginia Department of Medicine		(1930)	Virginia

Book Notices

The Operative Story of Cleft Palate. By George Morris Dorrance. MD. F.A.C.S. Professor of Maxillo-facial Surgery, the Thomas W Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania. Assisted by Inayat Shirey, DDS. Cloth. Price \$6.00. Pp 144 with 31 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

A complete history of the operative procedures for cleft palate is given; they are copiously illustrated and more than 4000 references are included. In the first chapter on the historiography of cleft palate, Dorrance says: "The operative story of cleft palate is by no means an easy task to narrate despite the fact that of all the procedures in surgery, the operation is about the only one which can be traced to its origin with any degree of accuracy. No one surgeon can have complete claim to any operative procedure since each method resulted from the experiences of many contributors whose efforts are interdependent. Dorrance has undoubtedly left little or nothing to be covered in the tracing of cleft palate surgery and after studying his book one would find that the field for new ideas is extremely limited. In the chapter on conclusions there is an admirable appraisal of the general methods of procedure with the author's own ideas of their advantages and disadvantages. He leads up strongly to his present method of palate closure and to his push back operation for short velums and partial clefts and a modification of it for complete clefts. The recent work of Logan on the position of the tooth buds is omitted but since Dorrance's procedure of closure is done preferably after 5 years of age the buds will be out of the way of damage. To the beginner

this book might be an invaluable aid if he accepted all of Dorrance's views and investigated further from this point. To the experienced operator the book will be invaluable for settling many details of priority, for help in evaluating procedures, and for reference to Dorrance's methods, to all who are interested in the work the book will prove a source of enjoyment and enlightenment.

Atlas der Erkrankungen der oberen Luftwege mit besonderer Berücksichtigung des Epipharynx. Von Dr. Siegfried Cräft, leitender Oberarzt am pathologischen Institut des allgemeinen Krankenhauses Darmstadt in Hamburg. II. Lieferung. Paper. Price 20 marks. Pp 86 with 71 illustrations. Leipzig: Curt Habitzsch, 1933.

This is the second part of an atlas portraying the diseases of the upper respiratory tract with particular reference to the epipharynx. As stated in the review of part I, the author has developed a method of removing post mortem the tissues of the nasopharynx, mesopharynx and hypopharynx *en masse*, so as to demonstrate easily the pathologic processes present. Nineteen cases are dealt with. Instances of normal anatomy in premature infants and the very young are photographically demonstrated. Among other conditions treated are hyperplasia of Waldeyer's ring, lymphatic leukemia widespread diphtheria of the pharynx and nasal cavities, various tuberculous processes of the pharynx and larynx, thrush of the upper respiratory passages, and one instance of congenital abnormality of development of the palate. The photography of these various specimens leaves little to be desired. The few colored ones among them are well done. The atlas, when published complete, should be a valuable source of information concerning the diseases of this part of the body.

The Peninsula of Yucatan. Medical, Biological, Meteorological and Sociological Studies. By George Cheever Shattuck, MD, Assistant Professor of Tropical Medicine, Harvard University Medical School. In collaboration with Joseph C. Bequaert, PhD and others. Carnegie Institution of Washington Publication No. 431. Paper. Pp 576 with 98 illustrations. Washington, D. C.: Carnegie Institution of Washington, 1933.

This monograph gives the findings of the first, second and third Yucatan medical expeditions, which were organized at the instigation of the Carnegie Institution of Washington by the Department of Tropical Medicine of Harvard University and took the field in 1929, 1930 and 1931. The object of the first expedition was a preliminary survey of disease in Yucatan; that of the second to supplement the preliminary survey and to throw light on questions relating to syphilis and basal metabolism among Mayan Indians, and that of the third primarily the distribution of malaria and amebic dysentery during the rainy season.

Part I, comprising 99 pages by Shattuck, Redfield and MacKay, deals with general and miscellaneous information about Yucatan. Chapter I gives a background dealing with such subjects as geography, flora, fauna, geology and physiography; chapter II gives an outline of the history of the peninsula, both ancient and modern; chapter III, a wealth of anthropological data; chapter IV, an outline of the civil government and official health organization; and chapter V, a description of some important communities.

Part II, comprising 350 pages by Shattuck with contributions by various collaborators, is entitled Medical Surveys and Other Data. Chapters VI, VII and VIII give medical surveys of different localities; chapter IX, an account of life in the forests of Quintana Roo; chapter X, a description of the Yucatan of Campeche, Guatemala, British Honduras and Chiriqui; chapter XI, bacteriological studies; chapter XII, animal parasites of man and animals; chapter XIII, syphilis; chapter XIV, blood picture, blood pressure and basal metabolism; chapter XV, leishmaniasis, trachoma and folliculosis; chapter XVI, epidemic diseases; chapter XVII, malaria, dysentery and certain other infectious diseases; chapter XVIII, miscellaneous diseases; chapter XIX, vital statistics; chapter XX, the climate of the peninsula; and chapter XXI, general considerations on disease, health and economic problems.

Part III, comprising 70 pages by Saunders in collaboration with Cornell, supplements part II and deals with further medical surveys (chapter XXII) malaria and other important infections (chapter XXIII) amebiasis (chapter XXIV) blood pressure (chapter XXV) and blood picture (chapter XXVI).

Part IV, comprising 76 pages, by Bequaert in collaboration with Clench, consists of various contributions to the natural history of the peninsula. There are botanic notes (chapter XXVII), descriptions of nonmarine mollusks (chapter XXVIII), entomologic contributions (chapter XXIX), and two appendices on reptiles and parasites of reptiles.

Throughout there are a wealth and variety of detail that preclude any detailed review. Among the many interesting facts brought out may be mentioned the following. An examination of 1,362 stools from 854 persons revealed 19.5 per cent infected with *Endamoeba histolytica* and allowing for the limitations of the method used it is estimated that the actual incidence of infection is about 40 per cent. In the same group 33 per cent showed evidence of active amebic dysentery and it is believed that a large proportion of clinical dysentery with blood and mucus in the stools is due to *E. histolytica*. Malaria is scarce, and of 2,198 blood smears only 48 were positive in thin film. Undoubtedly a large factor in this low incidence is the great scarcity of anophelines. Clinical evidences of syphilis in the Maya and Mestizos is practically nil although Kahn tests on 576 persons showed 57 per cent positive. Syphilis pressures for the Maya are definitely lower than for Americans.

The report as a whole makes fascinating reading and although primarily medical no pains have been spared to bring in the relevant historical, sociological and economic backgrounds. Throughout the data have been compiled and discussed with reference to similar data from other localities. The volume is well illustrated and there is a short bibliography appended to each chapter. There is no general index.

Cancer and Other Chronic Diseases in Massachusetts. By George H. Bigelow M.D., Dr. P.H., Commissioner Massachusetts Department of Public Health and Herbert J. Lombard M.D., M.P.H., Director Division of Adult Hygiene, Massachusetts Department of Public Health. Cloth. Price \$4. 1p. 350 with 11 illustrations. Boston & New York: Houghton Mifflin Company, 1933.

In this comprehensive volume the authors discuss the broad problem of chronic disease and point out that the aim of any serious social problem is a conscious and rational control of sickness and death. In fifty years the death rate in Massachusetts has dropped 25 per cent while the birth rate has correspondingly fallen 30 per cent, indicating an aging of the population. The increase in cancer is not apparent but real. Fifty years ago chronic diseases made up one third of the deaths in Massachusetts whereas today they constitute two thirds of the deaths. According to the authors the medical approach to chronic disease has five aspects: (1) prevention, (2) early diagnosis, (3) cure, (4) alleviation and (5) terminal care. Concerning terminal care, the authors advise against segregation of the dying and point out that few institutions can keep their good names with a death rate over 30 per cent. These individuals should be cared for in small groups near their own homes. In Massachusetts, heart disease furnishes about 20 per cent of all deaths, cancer, 10 per cent. Rheumatism causes fewer deaths but greater disability than heart disease. The average untreated patient suffering from cancer lives two years, heart disease from seven to nine years, rheumatism, fourteen years or longer.

Diagnostic cancer clinics under government stimulation began in Massachusetts in December, 1926. At present twelve clinics are operating in fifteen cities. The clinics were organized by the local medical societies in cooperation with the Massachusetts Department of Public Health. The organization and activities of the Pondville Hospital are described. A chapter on statistical studies on cancer in Massachusetts presents interesting figures. The problem of social service in relation to cancer is discussed by Eleanor Kelly, and a chapter on education is presented by Mary Lakeman.

The authors' names are already well known in public health activities, particularly in the field of cancer. Those interested in the problem of chronic disease will welcome this volume. Aside from the valuable statistical information presented the method of approach and technic of execution of these problems are of extreme interest. The results attained are of such significance that they must form the basis of similar programs in other localities. The data are presented in such attractive style as to render a usually tiresome statistical report highly

entertaining reading. The book should appeal to a variety of individuals—laymen, physicians, hospital administrators, social service workers and public health officials—alike. It is a welcome and important addition to the medical library.

La phrénicectomie. Par L. Barard, professeur de clinique chirurgicale à la Faculté de médecine de Lyon. F. Dumarest, médecin en chef du Sanatorium Mangin à Hauteville et Desjardes, chirurgien des hôpitaux de Lyon. 1aper. 1rèce. 30 francs. 1p. 113 with 19 figures and 17 plates. Paris: Masson & Cie, 1933.

It is significant that surgical interruption of the phrenic nerve for pulmonary tuberculosis has attained sufficient importance to stimulate the production of a volume devoted to the subject. The opinions expressed in this book have the virtue of being neither too enthusiastic nor unduly pessimistic. Emphasis is properly placed on the fact that phrenic paralysis produces its best results in relatively early and restricted lesions that are fibrotic and retractile rather than pneumonic in character. The authors have stressed the selective action of the rise and paralysis of the hemidiaphragm with the resulting rest and relaxation of the tuberculous lesions, whether they are in the upper or the lower lung. The chapters on anatomy and physiology have been painstakingly prepared. The volume has a number of major defects that render it unsuitable for recommendation as an authoritative guide. It is apparently the conclusion of the authors that induced pneumothorax should virtually always be tried before phrenic paralysis which, they feel, should be reserved for cases in which pneumothorax is clinically unsatisfactory or to supplement a thoracoplasty or extrapleural pneumonolysis. It is radical practice first to institute a pneumothorax that needs to be maintained for at least one, two or three years, for limited torpid lesions which include a small cavity which a phrenic paralysis has an excellent chance of healing. One of the principal objections of the authors to the initial use of phrenic paralysis is that permanence of the paralysis is uncertain and that if diaphragmatic motion returns a good primary clinical result will be seriously jeopardized. As return of motion is usually due to faulty operative technic, it is avoidable. Incidentally, a cutaneous incision of from 6 to 7 cm. is unnecessary and disfiguring. Temporary paralysis of the phrenic nerve for approximately six months which is obtained by crushing the main phrenic nerve stem and resecting all accessory roots, has greatly extended the usefulness of phrenic surgery in phthisis and is the most important advance that has been made since Goetze and Felix improved the operative technic for permanent paralysis eleven years ago. If a six months paralysis proves to be clinically satisfactory for a given case it may easily be made permanent by another operation but if the clinical result is unsatisfactory by the time diaphragmatic motion returns the patient will not be deprived of this function for life, this is especially important if an upper stage thoracoplasty or extrapleural pneumonolysis then needs to be performed in the presence of bilateral lesions. The authors however do not recommend temporary paralysis because they have found with their operative technic that the duration of the paralysis varies uncontrollably between several weeks and several years. It is unfortunate that more of the opinions expressed by the authors are not based on exact statistical knowledge of their own results. Because many of their first treated patients have been lost track of the authors have not undertaken to present any of their statistics although they have used phrenic nerve interruption for more than 700 patients. Satisfactory roentgenograms of seven cases are reproduced.

The Technic of Local Anesthesia. By Arthur E. Hertzler, A.M., M.D., Ph.D., Professor of Surgery in the University of Kansas. Fifth edition. Cloth. Price \$5. Pp. 292 with 148 illustrations. St. Louis: The C.V. Mosby Company, 1933.

This edition following the fourth in rapid succession, is an eloquent testimony of the usefulness and popularity of Hertzler's monograph. A concise chapter on spinal anesthesia has been added by Dr. Axel E. Spelman and another on intravenous amytal anesthesia by Dr. Raymond F. Gard. This book is truly written with great simplicity advocating methods of infiltration whenever possible. The author properly points out that while complicated nerve blocks may be effective in the hands of experts they do not serve the needs of the average surgeon. The author's vast surgical experience and thorough

knowledge of pathology permeate the entire volume and are a refreshing contrast to some contributions on the same subject by pure anesthetists. One must, however, take issue with the persistent advocacy of quinine solutions to prolong the duration of anesthesia. While the author's skill may have prevented lasting indurations and sloughs, the general use of this drug must be condemned. This is true also of the use of sterile water as a solvent for procaine. Physiologic solution of sodium chloride is certainly available wherever major or minor surgery is being done and insures an isotonic solution. The author's advice that solutions should be prepared by the surgeon himself just prior to operation is certainly sound. Printing and illustrations are most satisfactory. Dr. Hertzler has added one more excellent treatise on this subject.

Stoke Park Monographs on Mental Deficiency and Other Problems of the Human Brain and Mind. No. 1. The Burden Memorial Volume Dedicated to the Memory of the Late Reverend Harold Nelson Burden, Founder and First Warden of the Incorporation of National Institutions for Persons Requiring Care and Control. Edited on Behalf of the Medical and Consultant Staff of Stoke Park Colony, Stapleton, Bristol. By Richard J. A. Berry, M.D., F.R.C.S., F.R.S.E., Director of Medical Service. Cloth. Price 10/6. Pp. 249 with 89 illustrations. London: Macmillan & Company Ltd. 1933.

This volume consists of seventeen articles by members of the attending and visiting staffs of the Stoke Park Colony, an institution taking care of 2,000 mental defectives and especially endowed and equipped for research work. Not the least interesting is the brief biography of Rev. Harold Nelson Burden, a man of rare capacities, having excelled at the same time as a clergyman and missionary, as an organizer and administrator, and as a director or at least instigator, of research. All aspects of mental deficiency are discussed including the gross and minute brain changes and neurologic symptoms. There are many excellent illustrations of unusual conditions, perhaps most striking being some of a patient with the Klippel-Feil syndrome (p. 201).

Fractures. By Paul B. Magnuson, M.D., Associate Professor of Surgery, Northwestern University Medical School, Chicago. Cloth. Price \$5. Pp. 466 with 317 illustrations. Philadelphia: J. B. Lippincott Company. 1933.

The author of this book has had a large experience in the treatment of fractures and other industrial conditions. He has written a book to meet the needs of the general practitioner and has attempted to simplify methods of treatment. He approaches the problem of fractures from the standpoint of anatomy and physiology. He states that if the direction and amount of force that cause a fracture plus the muscle pull that maintains it in a position of deformity are clearly understood, and certain fundamentals in the mechanics and reduction are recognized, the surgeon's ingenuity can be relied on to meet the requirements of the individual case. The author has drawn freely from several of his colleagues, notably Potter, Case, Davis, and Coultter. The page on fundamentals is good. One of the noteworthy features of the book is the excellent line drawings by Shepard. Some of the roentgenograms do not teach the lessons that are intended, especially figures 149, 154, 172, 182, 194, 277, 278, or 286. Figure 182 is no credit to the book and the publishers. The author's operation which is a modification of the Whitman and Brackett hip reconstruction, is given in excellent style and beautifully illustrated. Figure 100 is a fine illustration of what is known as Monteggia's lesion. All in all, this book can be considered a handy volume for the general practitioner.

Biographisches Lexikon der hervorragenden Ärzte der letzten fünfzig Jahre. Herausgegeben von J. Fischer, Privatdozent an der Universität Wien. Zugleich Fortsetzung des Biographischen Lexikons der hervorragenden Ärzte aller Zeiten und Völker. Lieferungen I-11 (2 Bände). Paper. Price 51 marks per set. Pp. 1741 with 160 illustrations. Berlin and Vienna: Urban & Schwarzenberg. 1927/1937.

This volume is devoted to brief biographies of leading physicians of the last fifty years. The American editor whom the German editor thanks for cooperation in providing names of American physicians was Dr. Fielding Garrison. The book contains some pictures of the Americans selected for illustration being Dr. John Shaw Billings, William Crawford Gorgas, J. C. Hemmeter, Jacques Loeb, and William Osler. Most of the biographies are short, the average being approximately ten lines, but some occupy from twenty-five to fifty. The work

is an exceedingly useful reference work to the prominent names in medical science. No doubt there are serious omissions, as inevitably must occur when a work is selective, as is this one, but for what it contains it is accurate and dependable.

Das Röntgenraumbild. Von Dr. Werner Teschendorf, Chefarzt des Strahleninstituts der Allg. Ortskrankenkasse Köln, und Dr. Hans Kohnle, Röntgenologe der Inneren Klinik der Medizinischen Akademie Düsseldorf. Paper. Price 9 marks. Pp. 173 with 126 illustrations. Berlin: Urban & Schwarzenberg. 1933.

This monograph also appears under the title "Die Röntgenstereoskopie" in Abderhalden, *Handbuch der biologischen Arbeitsmethoden*, Abt. II, Teil 3 (Lfg. 408). The importance of the stereogram in roentgen diagnosis cannot be overestimated. Unfortunately, most works on stereoscopy are too technical, too elementary or too specialized on some variety of apparatus or on some procedure to be of general interest. The present monograph, therefore, tends to fill a wide gap in roentgenologic literature. In it the authors discuss the optical fundamentals, both theoretical and technical, of stereovision, especially in its roentgenologic aspects. Representative types of apparatus are discussed in some detail to emphasize the structural and stereographic peculiarities of the roentgen stereoscope in general. The most important sources of error are outlined, important hints are given as to how to utilize roentgen stereoscopy to its greatest advantage, and lines of future development are indicated. An extensive bibliography of twenty-two pages closes the work. This book should be studied by all roentgenologists because of the great importance of its succinct contents. This would be facilitated by a more complete index of the subject matter.

Meningite aguda linfocitária benigna. Idéias gerais sobre as meningocelafomilites por vírus neurotrópicos. Por Dr. Fernando de Oliveira Bastos. Tese de doutoramento apresentada à Faculdade de medicina de São Paulo e aprovada com grande distinção. Grau 10. Trabalho da clínica psiquiátrica e neurológica (serviço do Prof. Enjolras Vampre). Paper. Pp. 112. São Paulo: Faculdade de medicina de São Paulo. 1933.

This doctorate thesis deals with so-called benign acute lymphocytic meningitis, a condition that has been receiving some attention in several European countries during the last ten years. It has sometimes coincided with small epidemics of poliomyelitis and encephalitis and may then have been a meningeal form of one of these diseases. The existence of this benign disorder should be borne in mind in the differential diagnosis of lymphocytic tuberculous meningitis. Nine cases are related in detail. The literature is thoroughly sifted, and a bibliography of 199 numbers is appended.

Diagnostic et traitement du kala azar méditerranéen de l'enfant et de l'adulte. Par M. D. Elnitz, licencié en sciences. Preface du Dr. Fernand Bezançon. Paper. Price 17 francs. Pp. 110 with 18 illustrations. Paris: Masson & Cie. 1933.

After calling attention to the growing importance of this disease to physicians in the French Mediterranean littoral, the author endeavors to bring together the information published in recent years bearing especially on diagnosis and treatment of the disease as it occurs in children and in adults. The clinical characters of the infection receiving attention are the incubation period and prodromal symptoms, the course of the temperature, splenomegaly and hepatomegaly, anemia, cutaneous symptoms, and the minor signs such as digestive and respiratory disturbance, and edema. The serologic tests discussed are the formal-gel test, Chopra's urea stibamine test, and Brahmachari's serum globulin test. Parasitologically, the Leishman-Donovan bodies may be demonstrated directly or the leptomonad forms resulting from them may be grown culturally. The direct demonstration of Leishman-Donovan bodies is made through splenic or hepatic puncture. The emphasis is placed on splenic puncture with a mere mention of hepatic puncture, although the former is known to be decidedly more dangerous. No mention is made of the effectiveness of hepatic puncture combined with cultivation of the material obtained by puncture. Blood culture on *N.N.* medium is thought to be as accurate as splenic or hepatic puncture when it is properly carried out, and this method does not involve the dangers attached to puncture. Chapters are given on treatment with antimony and potassium tartrate, its results, and the accidents from and contraindications to its use. A brief chapter is given on the surgical treatment of the disease. The bibliography is incomplete, references only to French articles being given.

Medicolegal

Liability of Hospital for Negligence of Nurse Hypodermoclysis—An appendectomy was performed on one of the appellees, at the defendant's hospital. While the patient was still unconscious one of the defendant's nurses performed a hypodermoclysis, injecting the solution into the patient's breasts. Attributing to this injection injuries to her breasts and to her health generally, the patient and her husband sued the defendant. Judgment was given in their favor, and the defendant owner of the hospital appealed to the Supreme Court of Florida.

The fact that the nurse performed the hypodermoclysis was not disputed. She admitted that she noticed ill effects from it before she had injected more than 50 cc of the solution, the tissues were not properly absorbing the injection. But she did not stop, nor did she call a physician to her aid. She continued until she had injected about 650 cc of the solution into the breasts of her unconscious patient. As a result, the patient's breasts were scarred, defaced and practically destroyed, and she suffered ill health.

To care for the unconscious patient, said the Supreme Court, was admittedly a part of the nurse's duty. That duty included the correlated duty of not continuing the hypodermoclysis after it was evident that it was affecting the patient badly. This correlated duty was neglected when the nurse, after noticing the bad effect of the operation she was performing, neither discontinued it nor called in medical aid. The evidence showed that the hypodermic needles used in performing a hypodermoclysis are usually handled by or under the direct supervision, observation and direction of a physician. Regardless of the nurse's competence and good faith and regardless of the care used by the hospital in employing her, the hospital, said the Supreme Court, is legally liable for the results of her breach of duty. The duty of the hospital is to nurse and care for its unconscious patients properly, not to subject them to personal injuries by continuing a course of treatment that is having an obviously unusual and deleterious effect. The testimony of the nurse was sufficient to sustain the verdict.

The defendant's contention that the reaction of the patient to the hypodermoclysis was caused by an idiosyncrasy in her physical makeup, said the court, was passed on by the jury. The jury found that even if the patient was peculiarly susceptible to injury by the hypodermoclysis, the nurse persisted in the operation after she was aware of its ill results. A person who is injured by the negligence of another is entitled to recovery even though the injured person is by reason of a pre-existing disease condition, more susceptible to injury than is an ordinary person. Certainly a person is not bound to be free from all complications in order to be entitled to recover damages for an injury he sustains through the negligence of another.

It was no defense for the hospital, said the court, to claim that because its business is not conducted for gain or profit although charges are made for rooms and for nursing service therein, it is exempt from any and all duties toward the patient except that of using due care in the selection of suitable and competent attendants. The owner and proprietor of a hospital is liable for the positive negligent infliction of injury on a patient by an employee nurse, regardless of whether due care was or was not used in the selection of the nurse.

The judgment of the court below in favor of the injured patient and her husband was affirmed.—*Parrish v Clark (Fla)* 145 So 848

Compulsory Sterilization Statute Unconstitutional Provision for Notice and Hearing Required—Mary Brewer the plaintiff, was 27 years old. She went to work when she was 10 years old married early, and was the mother of five children. There was nothing in the record impugning Mrs. Brewer's character. When her husband worked, he drank and gambled and did not put his money into proper channels. His family often went hungry. Some one whose identity the decision does not disclose, thought that Mrs. Brewer should be prevented from giving birth to more children. Proceedings

were therefore instituted against her, under a North Carolina statute (Michie's N. C. Code of 1931, sections 2304 (i) and 2304 (j)) authorizing the sterilization of any mentally defective or feeble-minded resident of the state, not an inmate of any public institution, on the petition of his or her next of kin or legal guardian. A hearing was held before the superior court of Forsyth county and a jury, April 29, 1932. Mrs. Brewer was adjudged incompetent to manage her affairs, a guardian was appointed, and on the same day the guardian requested the board of commissioners of the county to have Mrs. Brewer sterilized. Apparently no notice of the proceeding looking toward her sterilization was served on her and she was given no opportunity to be heard. The board of commissioners nevertheless authorized and ordered Dr. A. DeT. Volk to perform the operation. Mrs. Brewer thereupon sought a restraining order to prevent Dr. Volk from operating. The superior court of Forsyth county held that the statute under which the sterilization of Mrs. Brewer had been ordered was invalid and unconstitutional in that it failed to provide for giving proper notice of the operation and an opportunity to present witnesses and to be heard. It therefore enjoined Dr. Volk and the other defendants named in the petition from performing the proposed operation. The defendants thereupon appealed to the Supreme Court of North Carolina.

In property rights, said the Supreme Court, due process requires a forum, with notice and a hearing. It goes without saying that the same must apply to human rights. The North Carolina eugenic sterilization act makes no provision for notice and hearing for the person whom it is proposed to sterilize. It therefore impinges the due process clause of the constitution. The judgment of the court below, permanently enjoining the proposed sterilizing operation was therefore affirmed.—*Brewer v Volk (N. C.)* 167 S. L. 638

Wills Delusions and Testamentary Capacity—Monomania sometimes designated paranoia, says the Supreme Court of Florida, has reference to a craze or mania for a single object or class of objects. The victim of it may be perfectly sane as to all other objects. As is the case with an insane delusion monomania presupposes mental disease. An insane delusion is not proved by evidence of undue prejudice, if that prejudice is based on any kind of reasoning. An insane delusion has been defined as a spontaneous conception and acceptance as a fact, of that which has no real existence except in imagination. The conception must be persistently adhered to against all evidence and reason. It has also been defined as a conception originating spontaneously in the mind without evidence of any kind to support it which can be accounted for on no reasonable hypothesis has no foundation in reality and springs from a diseased or morbid condition of the mind. In the present case the probate judge had held that because the testator spoke of his son in an indecent and lewd manner he was so unnatural as to be motivated by an insane delusion. But chastity of diction said the Supreme Court of Florida, is not a determinant of testamentary capacity. There is a vast difference between a vulgar or a depraved mind and a diseased mind. The latter is characterized by decay and spontaneous conceptions without any basis for them in fact or reason, while the former may be strong and vigorous.—*Hooper v Stokes (Fla.)* 145 So 855

Society Proceedings

COMING MEETINGS

American Society of Tropical Medicine	Richmond Va	Nov 15 17
Dr Henry E. Meleney	Vanderbilt University School of Medicine	
Nashville Tenn	Secretary	
Association of American Medical Colleges	Minneapolis	Oct 30 Nov 1
Dr Fred C. Zapffe	5 South Wabash Avenue	Chicago
Medical and Surgical Association of the Southwest	El Paso Texas	
Dec 7 9	Dr W. Warner Watkins	Box 1587 Phoenix Ariz
Secretary		
Oregon State Medical Society	Portland	Oct 26 28
Dr Albert W. Holman	364 Washington Street	Portland
Secretary		
Southern Medical Association	Richmond Va	November 14 17
C. P. Loran	Empire Building	Birmingham Ala
Secretary		
Southern Surgical Association	Hot Springs Va	Dec 12 14
Dr Robert L. Payne	142 York Street	Norfolk Va
Western Surgical Association	Cincinnati	Dec 8 9
Dr Frank R. Teachener	306 East 12th Street	Kansas City Mo
Secretary		

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

3 136 (July) 1933

- Curability of Cancer of the Right Colon F W Rankin Lexington Ky —p 1
Coronary Occlusion J H Watkins Montgomery —p 5
Rheumatism in Children W H McCaslan Union Springs —p 8
Identification of Cancer Cells in Serous Fluids as Diagnostic Measure G S Graham Birmingham —p 13
Female Urethra as a Source of Urinary Disorders J A Martin Montgomery —p 16
Sinus Retention Cannula J A Keyton Dothan —p 19

American Heart Journal, St Louis

8 585 728 (June) 1933

- Dynamic Dilatation of Thoracic Aorta R H Bayley Ann Arbor Mich —p 585
Study of Lead IV Its Appearance Normally in Myocardial Disease and in Recent Coronary Occlusion L N Katz Chicago and M Kissin New York —p 595
Etiology of Heart Disease in Whites and Negroes in Tennessee C L Laws Atlanta Ga —p 608
Silhouette of Heart and Aortic Arch Orthodiagraphic Measurements J H Bainton New York —p 616
Tetralogy of Fallot Clinicopathologic Observations Quantitative Studies of Circulation Rate and Right-to-Left Shunt H N Segall Montreal Canada —p 628
*Method for Measurement of Velocity of Pulmonary and Peripheral Venous Blood Flow in Man G P Robb and Soma Weiss, Boston —p 650
*Method for Obtaining Blood Pressure by Arterial Compression and Simultaneous Capillary Observation J Q Griffith Jr and L H Collins Jr Philadelphia —p 671
Studies of Electric Field of Heart I Invariants of Electrocardiogram E B Zeisler and L N Katz Chicago —p 676
Electrocardiographic Findings in Tumors of Heart Report of Case M L Siegel and Anna M Young Cleveland —p 682
Electrocardiogram in Diabetic Coma J M Faulkner and B E Hamilton Boston —p 691
Tricuspid Stenosis Review of Literature and Report of Case with Antemortem Diagnosis E B Zeisler Chicago —p 697
Apparatus for Determination of Venous Pressure in Man R W Kissane and R A Koons Columbus Ohio —p 705
Digitalis Assay with Isolated Cat Heart Compared with Other Method W Dock A B Stockton and A J Lehman San Francisco —p 707

Measuring Blood Flow in Man—Robb and Weiss injected intravenously sodium cyanide in amounts sufficient to stimulate respiration in thirty-five normal persons. The injections were made rapidly from a graduated 1 cc Luer syringe. The optimal dose of cyanide varied with the weight of the subject and with the site of injection. The average optimal dose for injection into the antecubital vein was 7 mg, corresponding to 0.35 cc of a 2 per cent solution of sodium cyanide or 0.11 mg per kilogram of body weight. With jugular vein injections a comparable effect was obtained with approximately two thirds of the antecubital dose. For foot injection one and one half times the antecubital dose were required. The time elapsing between injection and the occurrence of increased respiration corresponded closely to the circulation time. The authors used the external jugular vein of the neck to measure the pulmonary circulation time and the antecubital vein of the forearm or a superficial vein of the foot to measure the arm to carotid or foot to carotid circulation time. The average arm to carotid circulation time was 15.6 seconds; the jugular-to-carotid or crude pulmonary circulation time was 10.6 second and the average arm index of venous velocity was 4.5 second. The venous circulation time from the foot was found to be 15.1 seconds. The reliability of the reaction time of cyanide as a measure of the velocity of the blood flow has been shown by the remarkably close agreement with the circulation times obtained with the radon and dextrose methods.

The reaction time of cyanide was constant when sudden clear-cut respiratory reactions were obtained, even though their intensity varied. Repeated estimations of the circulation time with cyanide were feasible after such short intervals as from three to five minutes. Repeated estimations varied two seconds or less.

Method for Obtaining Blood Pressure—Griffith and Collins describe a method for obtaining the blood pressure in the brachial artery by brachial compression with a blood pressure cuff and simultaneous observation of blood flow in the capillaries of the nail bed of the fingers. It consists in occluding the brachial artery with a pressure above systolic, waiting for cessation of the flow in the digital capillaries, and then slowly lowering the pressure until the flow is just resumed. This point is taken as the systolic pressure or, in a case without pulsation as the mean pressure. As the method does not require pulsation, it is especially valuable in those cases in which pulsation is absent. Results obtained are compared with those obtained by auscultation in normal persons. The systolic blood pressure obtained by capillary observation was found to vary between 5 and 12 mm of mercury lower than that obtained immediately afterward by auscultation. One patient without pulsation in the brachial arteries was studied, and the results were confirmed by a direct pressure reading after arterial puncture.

American Journal of Diseases of Children, Chicago

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- Interpretation of Some Recent Advances in Medicine in Terms of Equilibrium O M Schloss New York —p 1
*Soy Bean Flour in Infant Feeding Study of Relation of Comparative Intakes of Nitrogen Calcium and Phosphorus on Excretion and Retention of These Elements by Infants Genevieve Stearns, with technical assistance of Martha J Oelke J B McKinley and Eva A Goff Iowa City —p 7
Tuberculin Patch Test Diagnostic Aid in Tuberculosis M Grozin Flushing N Y —p 17
Nitrate Nitrogen in the Urine of Children Edith S Hewitt and A S Hurt Jr Rochester Minn —p 24
Paralysis of Diaphragm in the New Born R M Tyson and J E Bowman Philadelphia —p 30
Further Roentgenographic Studies of Chests of Children During Measles J L Kohn and H Koiransky New York —p 40
*Pneumonia in Infants Due to Bacillus Mucosus Capsulatus J A Ferguson and A A Tower Meriden Conn —p 59
*Growth and Retentions of Calcium Phosphorus and Nitrogen of Infants Fed Evaporated Milk P C Jeans and Genevieve Stearns with technical assistance of Eva A Goff J B McKinley and Martha J Oelke Iowa City —p 69
Thumb Sucking Apparatus W W Anderson Atlanta Ga —p 90
Dietary Control and Etiology of Dental Caries L Schoenthal and R H Brodsky New York —p 91
Hemoglobin Content of the Blood of Infants C A Elvehjem W H Peterson and Dorothy Reed Mendenhall Madison Wis —p 105

Soy Bean Flour in Infant Feeding—Stearns determined the excretion and retention of nitrogen, calcium and phosphorus of an infant fed milk and various soy bean preparations. The relative proportions of nitrogen, calcium and phosphorus ingested differed with the diets. An increase in the relative intake of nitrogen and calcium as compared to the phosphorus intake resulted in an insufficient retention of phosphorus. Under these conditions the urinary excretion of calcium was tremendously increased and the urinary phosphorus markedly decreased. The excessive excretion of calcium in urine noted with two of the diets is interpreted as evidence of an absorption of calcium greatly in excess of the amount that can be deposited in bone with the limited quantity of phosphorus available. The marked alterations in urinary excretion of phosphate are without apparent effect on the excretion of sulphate and chloride in urine. Excessive excretion of calcium in the urine is accompanied by a shift in the mode of excretion of other bases decreasing the excretion in urine and increasing the fecal excretion. The altered calcium metabolism does not seem to affect the retention of fixed bases other than calcium. The substitution of dicalcium phosphate for calcium carbonate in the soy bean food improved the relative retention of nitrogen calcium and phosphorus. The modified soy bean food appears to be a satisfactory food for infants. The author concludes that in the feeding of infants the relative proportions of nitrogen, calcium and phosphorus in the diet are fully as important as the absolute intakes of the elements. From the results of this study it is suggested that as the relative proportions of these

elements in cow's milk allow adequate retention of each, this ratio seems a safe guide to follow

Pneumonia in Infants—Ferguson and Tower report two cases of lobular pneumonia in infancy caused by *Bacillus mucosus-capsulatus*. The patients were a twin girl and boy, aged 7 months. The girl contracted the disease first and died on the eighth day. The boy became ill two days after the onset of the illness in his sister but completely recovered after a hospitalization period of thirty-two days. Bacteriologic examination of the throat and tracheal secretion is the most important procedure from a diagnostic standpoint. The extreme pallor of the skin and dehydration, the cough and mucopurulent nasal discharge in the two cases, together with the vomiting and diarrhea, which cleared up early in the disease, are suggestive from a standpoint of differential diagnosis. Pneumonia in infants due to *Bacillus mucosus-capsulatus* may not terminate fatally. The pulmonary involvement is perhaps most often lobular, and the roentgen signs which are characteristic of the disease in adults may not occur in infants.

Retentions of Infants Fed Evaporated Milk—Jeans and Stearns studied the actual retentions of nine healthy male infants fed evaporated milk for periods lasting from eighteen to forty eight weeks. The evaporated milk used for the feedings was purchased in the open market, diluted with an equal quantity of a 12 per cent solution of corn syrup and acidified with lactic acid. In addition to the evaporated milk, one teaspoonful of cod liver oil was given daily to infants of all ages. 1 ounce (30 cc) of orange juice daily to infants under 4 months of age and 2 ounces (60 cc) to older infants. An egg yolk was added to the daily diet at 4 months of age, sieved vegetables at 5 months and sieved fruits at 6 months. In order to have the periods of metabolism comparable the same vegetable (tomato) and fruit (apricot) were given each infant during the periods of study. The growth in length and weight was excellent and exceeded standard rates of growth and the rate of the average male infant. Except in the early weeks when clinical evidences of moderate overfeeding were present, the retentions of nitrogen, calcium and phosphorus were high and were approximately the same as those which had been obtained when undiluted acidified fresh milk was fed. The high retention of nitrogen, high excretion of creatinine and good physical progress are considered evidences of good muscular growth. The high retentions of calcium and phosphorus, early carpal ossification, rapid growth in body length and the absence of clinical or chemical evidence of rickets are considered evidences of good bone growth. From the data presented the authors conclude that evaporated milk when used with dietary supplements is a good food for infants. From the standpoint of permitting good growth and high retentions of nitrogen, calcium and phosphorus, evaporated milk compares favorably with fresh milk given with the same dietary supplements.

American Journal of Hygiene, Baltimore

18 1 246 (July) 1933

- Nutrient Quality of Eggs for Growing Tubercle Bacilli H J Corper and M I Cohn Denver—p 1
- Antigenic Properties of Bacteriophage Lysates of *Salmonella* *Suispestifer* III Circulating Antibodies Produced in Rabbits in Response to Injected Bacteriophage Lysates Pearl Kendrick Baltimore and Grand Rapids Mich—p 26
- Id IV Observations on Antilytic Antibody Pearl Kendrick Baltimore and Grand Rapids Mich—p 53
- Host Parasite Relations of *Hymenolepis* *Fraterna* in Rat and Mouse D A Shorb Baltimore—p 74
- Experimental Studies on Human and Primate Species of *Strongyloides* II Development of *Strongyloides* in Experimental Host E C Faust New Orleans—p 114
- Relapse and Associated Phenomena in *Haemoproteus* Infection of the Pigeon G R Coatsy Lincoln Neb—p 133
- Diurnal Gametic Periodicity in Avian *Isopora* D C Boughton Madison Wis—p 161
- Feeding Reactions of *Balanitium* *Coli* from Chimpanzee and Pig E C Nelson Baltimore—p 185
- Study of Complement Fixation in Experimental Amebiasis in Dogs C F Craig and E S Kagy New Orleans—p 202
- Cross Immunity and Correlation of Oocyst Production During Immunization Between *Eimeria* *Miyairi* and *Eimeria* *Separata* in Rat E R Becker and Phoebe R Hall Ames Iowa—p 220
- Role of Bacteria in Nutrition of Mosquito Larvae Growth Stimulating Factor E H Hinman New Orleans—p 224
- Relation of Actinic Intensity of Sunshine to Minimal Wavelengths F O Tonney G L Hoeft and Frances W DeYoung Chicago—p 237

American Journal of Medical Sciences, Philadelphia

186 1 156 (July) 1933

- Inheritance of Diabetes Mellitus I Analysis of Six Hundred and Seventy Five Family Histories G Pincus and Priscilla White Boston—p 1
- Metabolism of Ixulose I Some General Considerations on Provocative Ixulosuria A W Rowe A J Plummer and Mary A McManus Boston—p 15
- Incidence and Severity of Arteriosclerosis in Organs from Five Hundred Autopsies W B Wartman Philadelphia—p 27
- Allergy in Hypertension M B Cohen M H Lineberg and J A Rudolph Cleveland—p 35
- Unusual Changes in Electrocardiograms of Patients with Recent Coronary Occlusion Anne Bohning and L N Katz Chicago—p 39
- Specific Serum Treatment of Type I Lobular Pneumonia Regulation of Dosage by Observation of Circulating Agglutinins with Stained Slide Agglutinin Test J W Parsons and W D Suthiff Boston—p 57
- Seasonal Influenza N J Burden Philadelphia—p 61
- *Chronic Adrenal Insufficiency Hitherto Undescribed Syndrome Case Report M Pickard and H F Wechsler New York—p 66
- Hypermotility of Gastro-Intestinal Tract in Hyperthyroidism Study of Forty Two Cases J W Shurr Cleveland—p 73
- Corroborative Value of Improved Gastrointestinal Braid in Diagnosis of Peptic Ulcer Comparative Study of One Hundred Cases E W Lipschutz New York—p 79
- *Short Interval Observations on Blood in Pernicious Anemia After Non-purified Liver Extract Intravenously S M Goldhamer R Isaacs and C C Sturgis Ann Arbor Mich—p 84
- Clinical Method of Measuring Red Cell Diameters by Diffraction J V Fahsi Washington D C—p 94
- Effect of Spinal Deformities on Heart J Edeiken Philadelphia—p 99
- Clinical Observations on Carotid Sinus Reflex I Frequency and Degree of Response to Carotid Sinus Pressure Under Various Dis-eased States L H Sigler Brooklyn—p 110
- Id II Response to Carotid Sinus Pressure at Various Ages and Heart Rates and Rhythms L H Sigler Brooklyn—p 118
- Id III Response to Carotid Sinus Pressure in Cases With and Without Precordial Pain L H Sigler Brooklyn—p 125

Chronic Suprarenal Insufficiency—Packard and Wechsler report a case of malnutritional edema which exhibited an unusual clinical syndrome and a degenerative lesion of the suprarenals at necropsy. The puzzling feature of the case is the fact that, in spite of the continuation of his diet and for no reason that could be demonstrated by clinical and laboratory examinations the patient in the second half of his illness suddenly began to deteriorate progressively. The main features were the complete loss of body fat and an advanced degenerative lesion of both suprarenals with necrosis, regeneration hemorrhages and capillary and venous thromboses. The author points out the similarity between the syndrome and the state or chronic suprarenal insufficiency in animals produced by bilateral suprarenectomy. They review the literature describing the effect of total and partial innervation and of the various vitamin deficiencies on the suprarenals in both animals and man and suggest that this clinical syndrome heretofore undescribed, is one of chronic suprarenal insufficiency due to the suprarenal degeneration occasioned by malnutrition.

Pernicious Anemia—Goldhamer and his associates studied the early changes in the blood with the onset of the reticulocyte response in two cases of pernicious anemia treated with liver extract intravenously. The blood of the two patients was observed day and night at intervals of four hours for eleven days. The liver extract used in one case was prepared according to the method of Castle and Taylor. The dosage given was 0.1 Gm per kilogram of body weight, which in this case amounted to 10 Gm of the liver extract. The total volume given was 80 cc. The other patient was given a similar extract. This patient received 65 Gm of the extract in a 50 cc aqueous solution. The injections were given slowly, at the rate of approximately 4 cc per minute. Observations of the blood pressure were made before and at frequent intervals after the injection until the pressure became stabilized at the pretreatment level. The blood counts were made according to the usual methods. The hemoglobin was estimated by the Leitz-Sahli apparatus. Complete counts were made twice daily. During the period of observation the patients remained in bed. Each patient was given a routine house diet with no liver or kidney. The reticulocyte response began within twenty-four hours following the administration of the first dose of liver extract, the maximum was reached in eighty-eight and 108 hours (cases 1 and 2). The return to the pretreatment level occurred in 264 hours (eleven days). The red blood cell count in case 1 increased 1,000,000 cells in ten days with a corresponding increase of 24 per cent of the hemoglobin. In the

second case there was also an increase of 1,000,000 cells in ten days, with a hemoglobin increase of 28 per cent. Liver extract (0.1 Gm per kilogram of body weight), when given intravenously, produces an effect lasting at least two weeks. The liver extract used in these experiments is not suitable for clinical use because of the reactions.

American Journal of Ophthalmology, St. Louis

16 481 570 (June) 1933

- Treatment of Nonparalytic Squint I C Peter, Philadelphia—p 481
Eye as Factor in Difference in Hue Between Daylight and Twilight C L Terree and G Rand, Baltimore—p 494
Visual Field Studies IV Pseudocontractions of Upper Form Field W D Rowland, Boston—p 496
Dr Randall as Ophthalmologist B Chance, Philadelphia—p 504
Simultaneous Comparison in Subjective Testing J I Pascal, Boston—p 509
Ophthalmoplegia Totalis D L Poe, New York—p 512
Lens Removal for High Myopia Results in Ten Eyes R O Connor, San Francisco—p 516
Recent Observations on Prolonged Occlusion Test F W Marlow, Syracuse, N Y—p 519

American Journal of Public Health, New York

23 547 654 (June) 1933

- Obstacles in No Diphtheria Path W P Shepard, San Francisco—p 547
Relation of Use of Milk to Physical and Scholastic Progress of Undernourished School Children F F Liminger, State College, Pa—p 555
Fumigation of Foodstuffs Public Health Aspects of an Increasing Commercial Practice C L Williams, Rosebank, Staten Island, N Y—p 561
Precaution When Filing Deferred Certificates S G Thompson, Jacksonville, Fla—p 567
Milk Borne Disease in Massachusetts 1930-1932 G H Bigelow and R F Feemster, Boston—p 571
Room Studies in Employee Effectiveness C E Turner, Cambridge, Mass—p 577
Purification of Beet Sugar Wastes M Levine, Ames, Iowa—p 585
Administration of a Bureau of Tuberculosis in a City Department of Health H R Edwards, New Haven, Conn—p 591
Replacement of Toxin Antitoxin by Toxoid with Consideration of Comparative Dosage W H Park, New York—p 600
*Test for Reaction Producing Substances in Concentrated Antipneumococcal Serum Preliminary Report L A Barnes and S D Kramer, Boston—p 616

Test for Substances in Antipneumococcus Serum—Experiments of Barnes and Kramer show that the production of chills and rises of temperature in twelve normal monkeys (*Macacus rhesus*) by intravenous injections of three lots of concentrated antipneumococcus serum corresponded closely to the responses observed in human cases of lobar pneumonia treated with these serums. A serum essentially chill free in human beings failed to produce untoward symptoms in monkeys; a serum mildly reactive in man produced chills in certain doses in monkeys but not in a smaller amount; a third serum causing chills in two thirds of the pneumonia patients treated produced similar reactions in four of six of the monkeys injected. Intravenous injections into monkeys of alcohol-soluble and alcohol-insoluble fractions of a reactive and a nonreactive serum elicited responses similar to those following the administration of the original concentrated serums.

American Review of Tuberculosis, New York

26 1164 (July) 1933

- Importance of Atelectasis in Pulmonary Tuberculosis Its Relation to Fibrosis and to Pathogenesis and Healing of Tuberculous Cavities I A Coryllos, New York—p 1
*Tuberculous Peritonitis C T Olcott and D Paccione, New York—p 27
*Effects of Virulence of Micro-Organism on Histopathology of Experimental Pulmonary Tuberculosis as Observed in Normal Rabbits Injected Intravenously with Tubercle Bacilli of High and of Low Virulence E M Medlar and K T Sasano, New York—p 62
Studies in Natural History of Phthisis F Grimes, Des Moines, Iowa—p 80
Types of Tuberculous Lesions Found in Cheests of Students of Nursing and Medicine J A Myers, Minneapolis—p 93
Question of Tubercle Bacilli in Blood in Advanced Pulmonary Tuberculosis Bacteriologic Study H J Corper and A P Dameron, Denver—p 118
*Use of Tubercle Bacilli in Vitro Further Observations H J Corper, Denver—p 128

Tuberculous Peritonitis—Olcott and Paccione studied a series of 109 proved cases of tuberculous peritonitis ninety of which were clinical and nineteen necropsies. In eighteen cases (all clinical cases) no other lesions were found. The follow-up in thirteen of the cases indicates that seven patients lived more

than one year, five lived less than a year and one had died. The average age of the eleven women with clinically uncomplicated tuberculous peritonitis was 15.2 years, and of the seven men 17.7 years. The average age of the seventy women in the entire series was 23.1, and of the thirty-nine men 30.1 years. Of the authors' clinical cases, 73.8 per cent were found in women, while the necropsy incidence was rather higher in men (after allowing for the higher rate of necropsies in the male). The incidence of clinical cases of tuberculous peritonitis in Italians and American-born people with Italian names was two and one-half times that of the hospital admissions as a whole. This group largely represented young women. The necropsy proportion of tuberculous peritonitis was not elevated in these two classes but was comparable to that in all diseases. The authors postulate that the high incidence, yet relatively good prognosis indicates an intermediate degree of tuberculation. In Negroes, on the contrary, the necropsy rate of tuberculous peritonitis was high. Tuberculous peritonitis seems to be definitely decreasing in the authors' hospital. The fallopian tubes showed tuberculosis in thirty-three of the seventy women, and the intestine in forty-one of the 109 cases. Their observations indicate that the tubes are more often secondarily involved from the peritoneum than vice versa. The United States mortality statistics show that deaths from tuberculosis of the intestine and peritoneum are more than 2 per cent of those from all forms of tuberculosis at all ages, while the involvement of these organs in the male is quite close to 2 per cent.

Effects of Virulence of Micro-Organism—Medlar and Sasano made a comparison of the microscopic changes caused by the same strain of tubercle bacillus in the state of high and of low virulence. The virulent bacilli caused an acute inflammatory response in the normal nonallergic rabbit wherein the neutrophils predominated. The bacilli of low pathogenicity called forth monocytes and lymphocytes, thus giving an inflammatory reaction of a chronic type. Abscesses, caseation and cavitation were regularly produced in normal nonallergic rabbits infected with bacilli of high virulence while tubercles, giant cells, lymphocytic infiltration and fibrosis were predominant in those infected with bacilli of low virulence. Classic tubercle is a retrogressive healing lesion. As such it is found in virulent infections on allergic soil or in nonvirulent infections on nonallergic soil. The present distinction between the pathology of first infection and reinfection is open to serious question because the degree of virulence and dosage of the infectious agent are not duly considered. The same criticism may be justly made of the distinction drawn between tuberculosis in the child and in the adult.

Annals of Surgery, Philadelphia

98 1160 (July) 1933

- *Surgery of Diabetic Gangrene E L Eliason, Philadelphia—p 1
Embolectomy for Arterial Embolism of Extremities H E Iearse, Jr, Rochester, N Y—p 17
*Trendelenburg Operation for Pulmonary Embolism R A Criswell, Louisville, Ky—p 33
Advances in Diagnosis and Treatment of Thrombo Angitis Obliterans S Perlow, Chicago—p 43
Thrombo-Angitis Obliterans Relief of Pain by Peripheral Nerve Section V F Laskey and S Silbert, New York—p 55
*Peripheral Vasoconstriction by Tobacco and Its Relation to Thrombo Angitis Obliterans W G Maddock and F A Collier, Ann Arbor, Mich—p 70
Basis for Recurrence of Varices in Various Forms of Thrombophlebitis F V Thies, Chicago—p 82
Renal Neoplasms Report Based on Twenty Five Cases of Malignant Tumors of the Kidney J A Lazarus, New York—p 92
Congenital Absence of Testes (Anorchia) V S Counsellor and M A Walker, Rochester, Minn—p 104
Extravesical Ureteral Opening Causing Urinary Incontinence T A Hepburn, Hartford, Conn—p 110
Infected Supernumerary Ureter and Relief of Kidney Heminephrectomy M S Brody, New Brunswick, N J—p 119
Postoperative Urinary Retention C G Jordan, Philadelphia—p 123

Surgery of Diabetic Gangrene—Eliason analyzed a group of 170 diabetic patients operated on for gangrene. Gangrene affected 13 per cent. More than 95 per cent of gangrene was in the lower extremity. Of the 170 patients, 50 per cent did not know of their diabetes until gangrene occurred. Open gangrene with infection is the commonest form and gives the poorest results (87 per cent of this series). Infection played

a part in 95 per cent of the fatal cases, *Bacillus welchii* and streptococci being the chief offenders. Early surgery in properly prepared diabetic patients is essential. Preoperative insulin, carbohydrates, fluids and perfusions are necessary. High amputations (midthigh)—76 per cent were midthigh and single—with drainage in infected cases, gave the best results. Transfusion and guillotine methods were the rule without tourniquet. Spinal anesthesia was used in 80 per cent of cases, local in 17 per cent. Diabetic patients with gangrene have had seven years added to their lives by modern methods of treatment. Operative mortality (twenty-four hours) was 35 per cent, hospital mortality, 41.8 per cent, one year mortality, 55 per cent. In the last sixty-seven cases there was a slight improvement over the previous series. Hospital days of the entire 170 patients was 365, of the survivors, 622 days. Only 10.4 per cent of these last sixty-seven patients are alive after eighteen months. Education of the patient, the physician and the surgeon is essential for the best results.

Pulmonary Embolism—Griswold presents two unsuccessful cases of pulmonary embolectomy. The first case illustrates some difficulties of diagnosis, the second the results of a too conservative attitude. The author believes that the failure of the Trendelenburg operation in the second case which should have been ideally favorable for the procedure, was due to the fact that oxygen was administered over a long period, improving the clinical appearance and masking the true condition of the patient until the overburdened right heart had lost all recuperative power after pumping against an almost completely obstructed pulmonary system for over eight hours. Operation was not carried out earlier because the patient's unchanged appearance led to the belief that she might recover spontaneously. If oxygen had not been administered her apparent condition would have become so bad as to force operation shortly after the onset. The author feels that, if the operation had been undertaken before the myocardium and respiratory centers had become exhausted it would have been successful. He concludes that this procedure, if carefully studied as to diagnosis, indications and technique is the only hope of saving a large number of patients since prophylactic measures directed against the incidence of pulmonary embolism have so far shown themselves of no avail.

Tobacco and Thrombo-Angitis Obliterans—Maddock and Collier present a study on the effect of tobacco smoking, largely in the form of cigarettes, on young adult smokers which demonstrates a consistent increase in blood pressure and pulse rate and a decrease in the skin temperature of the fingers and toes. Control experiments gave definite evidence that these effects were due to active products absorbed from the tobacco smoke. Nicotine administered intravenously in quantities not greater than that theoretically absorbed in the smoking of one or two cigarettes produced comparatively analogous changes. Greater effects were noted when the subject inhaled rather than merely puffed, and also with rapid smoking more than with slow smoking. The decrease in the peripheral skin temperature on smoking must be due to increased vasoconstriction. The decrease in the peripheral skin temperature was shown to be carried out through the sympathetic system. By increasing peripheral vasoconstriction smoking reduced the blood supply of the fingers and toes of the young adults studied. With several subjects the reduction lasted more than thirty minutes from the time of cessation of smoking and generally was of longer duration in the toes than in the fingers. In two cases of thrombo-angitis obliterans, smoking produced the same cardiovascular response as in the normal subjects. The already deficient circulation in the feet of these two patients was further reduced by smoking. The authors do not offer the data presented as evidence that tobacco smoking is the etiologic factor in thrombo-angitis obliterans. The occurrence of the disease in persons who have never smoked precludes that opinion. They do not doubt that prolonged or marked vasoconstriction for a sufficient period may initiate organic vascular occlusions. The changes may occur not only in peripheral arterioles, capillaries and venules but also in peripheral arteries and veins as a result of zones of poor nutrition in their walls through vasoconstriction of their vasa vasorum. The demonstrated vasoconstrictor effect of tobacco smoking would lessen or nullify the benefits of all conservative treatment. The experimental data presented

form a rational basis for the clinical conclusions as to the deleterious influence of tobacco smoking on the progress of thrombo-angitis obliterans. Its use definitely further decreases the already deficient circulation in the extremities of persons with the disease.

Archives of Dermatology and Syphilology, Chicago

28 1148 (July) 1933

- Effect of Specific Treatment of Prognosis of Syphilis of Cardiovascular System C W Barnett San Francisco—p 1
- Acute Necrotic Ulcers of the Scalp J F Lane New Haven Conn—p 10
- Pityriasis Rosea An Account of Suggested Contagiousness and of Attempted Experimental Transmission I H Kurtz and J B Davis Portland Ore—p 13
- Fungicidal Action of Some Common Disinfectants on Two Dermatophytes C W Fumons New York—p 15
- Skin Diseases in the New World from Oviedo y Valdes 1478-1557 V Iardo Castello Havana Cuba—p 22
- Oil of Crabapple A Little Known Drug That Is Valuable in Certain Dermatoses I W Ford Baltimore—p 29
- Cutaneous Allergy and Lymphogranulomatous Antigens W E Coutts and T B Branchi Santiago Chile—p 32
- Culture of Tubercle Bacillus by the Lowenstein Method C W Laymon Minneapolis—p 35
- *Intradermal Treatment of Lymphogranuloma Inguinale Preliminary Report M S Wien and Minnie Oboler Perlstein Chicago—p 47
- Ulcer of the Leg Its Localization as a Point of Differential Diagnosis in Syphilis and Yaws Endemic Countries C M Hasselmann Manila Philippine Islands—p 44
- Experimental Alopecia Contribution to the Study of Alopecia Areata B B Beeson and W J Lickett Chicago—p 53
- *Sporotrichotic Chancre H S Campbell K Frost and O A Plunkett Los Angeles—p 61
- Hereditary Ectodermal Dysplasia of the Anhidrotic Type Report of Case with Results of Biopsy A M Hill Grand Rapids Mich—p 66

Intradermal Treatment of Lymphogranuloma Inguinale

—For the past eighteen months Wien and Perlstein have had under observation twelve men and four women with lymphogranuloma inguinale. One of the men presented the anorectal syndrome usually seen in women. Their earliest patients were given subcutaneous injections of Frei's antigen as suggested by Hermans and improvement was noted after months of treatment. The authors noted in some of their patients that following the diagnostic Frei tests there was a cessation of the activity of the lesions together with an improvement in the general condition. They treated the patients coming under their observation subsequently with intradermal injections of Frei's antigen. They gave 0.1 cc of the antigen intradermally at intervals of from three to five days and an infiltrated papule formed at the site of each injection within forty-eight hours. When a marked local reaction occurred at the site of treatment, successive injections were made at remote sites. They also observed a reversal of the Frei reaction to negativity in three patients after each had received an average of eleven injections of the antigen into the forearm given at intervals of three days but positive results were obtained when the same Frei antigen was injected intradermally into the buttocks or into the backs of the same patients. After a period of rest of from two to three weeks positive Frei tests were again obtained on the forearm. The authors feel that the negative Frei tests were dependent on a temporary local desensitization of the forearm. There was a decided clinical improvement immediately after the first injections; new lesions ceased forming; the sinuses stopped discharging, and healing and fibrosis were hastened. In the patients with the anorectal syndrome there was alleviation of the rectal symptoms with improvement in the general condition. The advantages of intradermal injections of Frei's antigen in the treatment of lymphogranuloma inguinale are that less antigen is required and that the beneficial results are obtained in a shorter period of time than with the subcutaneous method. The intradermal method does not require any specially prepared antigen, and there is no constitutional reaction such as was noted by Hermans and Gay-Prieto.

Sporotrichotic Chancre—Campbell and his associates report a case of sporotrichosis in which only the primary, or chancre stage was manifested. The chancre was reproduced in a rat with recovery of the organism and a cultural pleomorphism was demonstrated following the single exchange of hosts. Sporotrichum was absent. This might have been due to the strain of the fungus or because the observations of others were made on material obtained from secondary lesions.

The treatment consisted of 15 grains (1 Gm) of sodium iodide given intravenously every fourth day. In the course of two months, complete healing was obtained. Approximately seven months later the patient was requested to return for observation and for the making of photographic records. At this time the area appeared even less prominent than on the date of her discharge, and the results of a general physical examination were normal.

Archives of Neurology and Psychiatry, Chicago

29 1179 1:88 (June) 1933

- Respiratory and Pupillary Reactions Induced by Electrical Stimulation of Hypothalamus S W Ranson and H W Magoun Chicago — p 1179
- Involvement of Facial Nerve in Malignant Hypertension J Q Griffith Jr Philadelphia — p 1195
- Recovery of Sensation in Denervated Pedicle and Free Skin Grafts F E Kredel and J P Evans Chicago — p 1203
- Intracranial Hydrodynamics I Experiments on Human Cadavers J H Masserman Baltimore and W F Schaller San Francisco — p 1222
- *Diffuse Sclerosis with Preserved Myelin Islands K Lowenberg Ann Arbor Mich and T S Hill Iowa City — p 1232
- Lymphoblastomatous Involvement of Nervous System H R Viets and I T Hunter Boston — p 1246
- Reaction of Cerebral Tissue to Direct Injection of Oil C R Tutthill and G M Beck Buffalo — p 1263
- *Paroxysmal Lacrimation During Eating as a Sequel of Facial Palsy (Syndrome of Crocodile Tears) Report of Four Cases with Possible Interpretation and Comparison with Auriculotemporal Syndrome F R Ford Baltimore — p 1279
- Nonorganization and Disorganization of Personality During Psychoses O Diethelm Baltimore — p 1289
- Heredity of Patients with Psychasthenia (Janet Raymond) I Hereditary Factors in Eight Hundred and Ninety Cases H A Paskind Chicago — p 1305
- Id II Comparison with Heredity of Persons in Good Mental Health H A Paskind Chicago — p 1311
- Id III Comparison of Heredity of Psychasthenia Patients with That of Schizophrenic Patients and Persons with Manic Depressive Psychosis H A Paskind Chicago — p 1314
- Cerebral Angiography with Thorotrast E Moniz Lisbon Portugal — p 1318

Diffuse Sclerosis—Lowenberg and Hill present the clinical and anatomic conditions found in a further case patho anatomically and histologically identical with the observations of Merzbacher in a child in whose family a peculiar hereditary disease of the brain had occurred in several generations, a case from the same family reported by Spielmeier and Liebers, and two sporadic observations, one by Bielschowsky and Henneberg and one by Bodechtel, showing few similar clinical trends. This condition is characterized by a peculiar degeneration of the white matter of both hemispheres of the brain and that of the cerebellum, the pons, the medulla and even the spinal cord. Within the destroyed areas there remain numerous perivascular myelin islands so that the destruction of the white matter is not complete.

Paroxysmal Lacrimation—Ford draws attention to a phenomenon that he has observed in four cases of facial paralysis of peripheral type. In each instance the paralysis was complete and persisted for several months. Regeneration of the nerve and the return of power in the face were accompanied by facial contracture and abnormal associated movements. Coincidentally with the return of voluntary movement excessive lacrimation on the affected side appeared whenever the patient ate or even took any solid substance into the mouth. This phenomenon never appeared under other circumstances. This symptom bears no relation to the common overflow of tears from the affected eye during the early stages of facial palsies when the lower lid is relaxed and the punctum of the tear duct is everted. The condition that the author describes does not develop until the paralysis has disappeared and the lid is again in its normal position. Moreover it is not constant but paroxysmal and invariably associated with excretion. In each case occlusion of the lacrimal duct was ruled out.

30 1:341 (July) 1933

- Cerebral Hemispheres of the American Black Race (U. S. Americans) Morphologic and Phylogenetic Characteristics W K Smith Rochester N Y — p 1
- Motor Cortex of Bear (U. S. American) Physiology and Histology Study W K Smith Rochester N Y — p 14
- Studies on Cerebral Cortex I Localized Control of Pacing and Hopping Functions in the Cat and Their Neural Management by Small Central Neurons P Earl Boston — p 40
- Neuronal and Central Nervous System (Schaller Christy Seneca Falls N Y) — p 75

- Role of Anterior Roots in Visceral Sensibility T T Stone Chicago — p 99
- Intracranial Hydrodynamics II Influence of Rapid Decompression of Ventriculosubarachnoid Spaces on Occurrence of Edema of Brain J H Masserman Baltimore and W F Schaller, San Francisco — p 107
- Halogen Balance of Blood Spinal Fluid and Urine in Patients with Convulsive States on Bromide Chloride Therapy J Notkin Teresa Carcia and J A Kilian New York — p 114
- Organic Functions in Schizophrenia R G Hoskins Boston and F H Sleeper Worcester Mass — p 123
- *Blood Cerebrospinal Fluid Barrier in Alcoholic Disorders and in Schizophrenia Complicated by Alcoholism Distribution Ratios of Bromide Calcium Sugar and Chlorides D Rothschild and Evelyn R Burke Foxborough Mass — p 141
- Polycythemia Rubra Vera Neurologic Complications Report of Four Cases J H Sloan Chicago — p 154
- Mechanical Factors Covering the Trommer Reflex M J Cooper Philadelphia — p 166

Xanthomatosis—Davison describes a case of xanthomatosis presenting diabetes insipidus, defects in the membranous bones and changes in the nervous system. In addition to the deposits of lipid cells found in most of the organs, the white matter of the central nervous system was the seat of numerous demyelinated plaques filled with compound granular corpuscles and giant glia cells. These two types of cells found in the neural structures are considered analogous to the foam cells and the reactive type of cells (fibrosis and inflammatory cells) demonstrated in other organs. In this disease the hypophysis was the seat of deposits of foam cells, while the tuber cinereum region showed evidences of reactive phenomena (gliosis, fibrosis and inflammatory cells) and occasional compound granular corpuscles and giant glia cells. The process is one of disturbance in lipid metabolism (cholesterol) and in some respects resembles Gaucher's and Niemann-Pick's diseases and possibly amaurotic family idiocy.

Blood-Cerebrospinal Fluid Barrier—Rothschild and Burke report the results of a study of the blood-cerebrospinal fluid barrier by Walter's bromide method in fifty-three cases of alcoholic mental disorder. Twenty-four showed low initial ratios for the distribution of bromide and values above 33 were obtained in five. The proportion of low ratios was somewhat greater in Korsakoff's psychosis and chronic alcoholism than in delirium tremens and alcoholic hallucinosis. Most of the cases presenting high ratios were atypical clinically. The distribution of bromide between the blood and the cerebrospinal fluid was investigated in fourteen patients with schizophrenia who were intemperate. The initial determinations yielded low ratios in eight and a high value in one. The authors' observations suggest that the excessive use of alcohol tends to lower the ratio of distribution of bromide regardless of the presence of a particular type of psychosis. The same tendency occurred in patients with chronic alcoholism who had at no time been psychotic. The ratios of distribution of calcium sugar and chlorides between the blood and the cerebrospinal fluid were determined in a number of the patients for whom the bromide test was performed. Essentially normal results were obtained. There was no relation between the ratios of distribution of bromide, calcium, sugar and chlorides.

Canadian Public Health Journal, Toronto

24 205 254 (May) 1933

- Considerations of Nutrition in Relief Work I Nutritional Aspect of Relief Work E W McHenry Toronto — p 205
- Id II Planning Minimum Food Budgets Marjorie Bell Toronto — p 207
- Id III Food Relief Work in Montreal Mildred D Coady Montreal — p 214
- Id IV Relief Food Allowances in Ontario Margaret S McCready Toronto — p 216
- Pathology of Measles Encephalitis I H Erb and I Ethel Mott Morgan Toronto — p 222
- The Annual Report of the Medical Officer of Health R D Defries Toronto — p 229

24 255 304 (June) 1933

- Preparation of Scarlet Fever Streptococcus Toxin and Its Use in Active Immunization M A Velde Washington D C — p 255
- When a Province Tackles Tuberculosis D A Stewart Ninette Munn — p 269
- Registration of Non-identical Births and Deaths I From the Urban Standpoint T J Ashton Toronto — p 276
- Id II From the Provincial Standpoint I Parrot Quebec Que — p 278
- Can Local and Provincial Committees Be Used for Vaccination? J Arnold Chicago — p 284

Illinois Medical Journal, Chicago

64 1 104 (July) 1933

- Basic Trends in Practice of Medicine C B Wright Minneapolis—p 61
 New Trends in Cancer Research J K Narat Chicago—p 65
 Generalized Blistomycosis Report of Case in a Child C H McKenna Chicago—p 68
 Hypoferric Anemia H L Alt Chicago—p 72
 Hemochromatosis with Cirrhosis W H Nadler and E M Haugrud Chicago—p 77
 Informal Study of Costs of Medical Care—Majority Report of Committee—Together with Sundry Other Matters of Associated Interest N W Sharpe St Louis—p 80
 Tuberculosis and Pregnancy F L Adair and M Spiegel Chicago—p 88
 Surgical Conquest of Abdominal Cavity A J Graham Chicago—p 94
 The Why of Proprietarys G L Servoss Reno Nev—p 97

Indiana State Medical Assn Journal, Indianapolis

26 305 356 (July 1) 1933

- Fracture of the Hip E B Mumford Indianapolis—p 305
 Development of Modern Medicine T Roosevelt Manila P I—p 311
 Caring for the Indigent in Shelby County S Kennedy Shelbyville—p 313
 Ictus cerebri D D Bowers Huntington—p 314
 Surgery in Its Relation to Diabetes Mellitus H F Thurston Indianapolis—p 319
 *Dislocation of Gladiolus Behind Manubrium Sterni Case Report E T Stahl Lafayette—p 323
 Some Recent Contributions to Knowledge of Coronary Disease A R Barnes Rochester Minn—p 323
 Physiology of Biliary Tract F C Mann Rochester Minn—p 326
 Roentgenologic Diagnosis of Early Pulmonary Tuberculosis B R Kirklin Rochester Minn—p 328

Dislocation of Gladiolus Behind Manubrium Sterni—Stahl reports a case of dislocation of the gladiolus behind the manubrium. A preliminary roentgenogram was not taken because of the visible suffering of the patient. He was given nitrous oxide anesthesia and an attempt was made at reduction by extension of the dorsal spine and pressure upward on the manubrium, but this was unsuccessful. Therefore the front of the chest was prepared and a small stab wound was made over the gladiolus 1 inch below the site of injury and a heavy corkscrew was then turned into the gladiolus. A sharp two-toothed retractor was then stabbed through the skin into the lower end of the manubrium and reduction was easily accomplished. Following this, a cross clavicular splint was worn for four days and the front of the chest was strapped with adhesive plaster. The patient was comfortable on awakening. A roentgenogram taken the day after reduction in profile and antero-posterior views, showed good position, and the separation to have been at the junction of the manubrium with the gladiolus with no fracture of the ribs or other bony structure of the chest. The patient made an uneventful recovery.

Johns Hopkins Hospital Bulletin, Baltimore

52 379 424 (June) 1933

- Experimental Acceleration of Rate of Transport of Ova Through Fallopian Tube G B Wislocki and F F Snyder Baltimore—p 379
 Occurrence of Macrocytic Anemia in Association with Disorder of Liver Together with Consideration of Relation of This Anemia to Pernicious Anemia M M Wintrobe and H S Shumacker Jr Baltimore—p 387
 *Use of Suprarenal Cortex in Treatment of Disorders of Thyroid Gland A Weinstein and A Marlow Baltimore—p 408

Suprarenal Cortex in Thyroid Disorders—Weinstein and Marlow used suprarenal cortical extract (Swingle-Pfiffner) in the treatment of five normal persons, seventeen patients with hyperthyroidism and two patients with hypothyroidism. The administration of raw suprarenal cortex by mouth or the parenteral administration of the suprarenal cortical hormone gave no definite improvement in the general nutrition of the patients or any diminution in the signs of the disease that was present and did not affect the normal persons. The authors suggest that the method employed in the extraction of the cortical tissue gives a product that contains a hormone capable of maintaining life in bilaterally suprarenalectomized animals, but not the hormone postulated to regulate thyroid function. It is known that in suprarenalectomized dogs kept in a state of good nutrition for periods as long as one year by use of the suprarenal hormone the thyroid gland does not show hyperplastic changes. On the contrary, atrophy of the thyroid is

usually seen. If the extract employed contained only the hormone that maintains life and not the substance that exerts the regulatory action on the thyroid, one would certainly expect to find hyperplasia in the thyroid cells. This fact supplies added evidence that the extract employed should have produced retardation of the overactivity of the thyroid in the patients, if the theory advanced by Marine and his associates is tenable.

Journal of Biological Chemistry, Baltimore

101 1 358 (June) 1933 Partial Index

- Method of Separating Anterior Pituitary Like Hormone from the Urine of Pregnant Women C A Elden Rochester N Y—p 1
 Effect of Ingestion of Water and of Urea on Cholesterol Content of the Plasma M Bruer and C A Poindestre New York—p 21
 Liver Injury and Blood Lactic Acid P F Hahn Rochester N Y—p 29
 Oxidation of Cysteine with Iodine Formation of a Sulphinic Acid Daisy G Simonsen Rochester Minn—p 35
 Effect of Light on Vitamin A Activity and Carotenoid Content of Fruits Laura Lee W Smith and Agnes Fay Morgan Berkeley Calif—p 43
 *Effect of Ingestion of Sodium Potassium and Ammonium Chlorides and Sodium Bicarbonate on Metabolism of Inorganic Salts and Water F H Wiley Leon I Wiley and Dorothy S Waller Ann Arbor Mich—p 73
 Inorganic Salt Balance During Dehydration and Recovery F H Wiley and Leon I Wiley Ann Arbor Mich—p 83
 Phosphatase Studies II Determination of Serum Phosphatase Factors Influencing Accuracy of Determination A Bodnarsky with assistance of L F Hallman and R Bonoff New York—p 93
 Standardized Methods for Determination of Uric Acid in Unaltered Blood and in Urine O Folin with assistance of Margaret Cushman Boston—p 111
 Preparation of Aliphatic Cholesteryl Ethers and Cholesterilene E Muller and I H Page Munich Germany—p 127
 Relation of Sulfhydryl to Inhibition of Yeast Fermentation by Iodoacetic Acid E F Schroeder Gladys E Woodward and Muriel E Platt Philadelphia—p 133
 Quantitative Studies of Composition of Glomerular Urine VII Manipulative Technique of Capillary Tube Colorimetry A N Richards J Bordley 3d Boston and A M Walker Philadelphia—p 179
 Simple Method for Detection and Estimation of Ulyketose in Urine Margaret Lasker and M Enklewitz New York—p 289
 Some Observations on Blood Phosphate M Sahyun Stanford University Calif—p 295
 Differential Lipid Analysis of Blood Plasma in Normal Young Women by Micro Oxidative Methods E M Boyd Rochester N Y—p 323

Inorganic Salt and Water Metabolism—The Wileys and Waller fed sodium potassium and ammonium chlorides and sodium bicarbonate in equivalent quantities to a normal man on a salt-poor maintenance diet. Sodium chloride administration was accompanied by a negative potassium balance, an early sodium and chloride retention followed by an increased excretion of both, an increased excretion of both urinary and fecal calcium and slight changes in body weight. The ingestion of potassium chloride caused an increase in the excretion of sodium and potassium, resulting in a negative balance for each of these elements, a decrease in the inorganic phosphates, an increase in inorganic sulphates, and no marked change in the body weight. The ingestion of ammonium chloride was accompanied by negative balances in sodium and potassium, the latter being quite marked slight negative balances for calcium and magnesium, and an increased ammonia formation and titratable acidity. The body weight declined during the feeding periods indicating a loss of body water and in the control periods the gain in weight more than balanced this loss. Sodium bicarbonate caused a slight retention of water, a negative sodium balance, a positive potassium balance, a slight decrease in chloride excretion, and a marked decrease in ammonia formation.

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- Ribosephosphoric Acid from Yeast Adenylic Acid P A Levene and S A Harris New York—p 419
 Melting Point of Naturally Occurring n Nonacosane A Correction K S Markley and C E Sando Washington D C—p 431
 Preparation and Properties of Thyroglobulin M Heidelberger and W W Palmer New York—p 433
 Glycine Synthesis in Pseudohypertrophic Muscular Dystrophy Irene Koechig Freiberg and E S West St Louis—p 449
 Rate of Absorption of Glucose from Intestinal Tract E M MacKay and H C Bergman La Jolla Calif—p 453
 Relationship Between Chemical Structure and Physiologic Response IV Conjugation of Salicylic Acid with Glycine and Its Action on Uric Acid Excretion A J Quick New York—p 475
 Chemistry of Lipids of Tubercle Bacilli XXXIII Isolation of Trehalose from Acetone Soluble Fat of Human Tubercle Bacillus R J Anderson and M S Newman New Haven Conn—p 499
 Amino Acid Nitrogen in Blood and Its Determination I S Danielson Boston—p 505

- Effect of Insulin on Amino Acid and Urea Nitrogen in Laked and Unlaked Blood H H Powers and F Reis Boston—p 523
Fluctuations of Blood Sugar in Vitro I S Kleiner and Rebecca Halpern New York—p 535
Fat Soluble Vitamins \\\VI Carotene and Vitamin A Content of Butter C A Baumann and H Steenbock Madison Wis—p 547
Id \\\VII Stability of Carotene Solutions C A Baumann and H Steenbock, Madison Wis—p 561

Journal of Clinical Investigation, New York

12 613 740 (July) 1933

- *Influence of Mineral Metabolism on Nephrotic Edema W S Hoffman and W E Post Chicago—p 613
Measured Effect of Laparotomy on Respiration H K Beecher Boston—p 639
Effect of Laparotomy on Lung Volume Demonstration of a New Type of Pulmonary Collapse H K Beecher Boston—p 651
Study of Human Liver Bile After Release of Common Duct Obstruction I S Ravdin C G Johnston C Riegel and S L Wright Philadelphia—p 659
Agglutinating Properties of Exudates from Patients with Rheumatic Fever C H Hitchcock Philadelphia and H F Swift New York—p 673
Role of Thyroxine Iodine and Total Organic Iodine in Calorigenic Action of Whole Thyroid Gland J H Means J Lerman and W T Salter Boston—p 683
Calculation of Water Exchange Note J P Peters D M Kydd and P H Lavietes New Haven Conn—p 689
Nature of Preformed Water J P Peters and P H Lavietes New Haven Conn—p 695
*Leukocytosis Following Intramuscular Injection of Liver Extract J H Powers and W P Murphy with assistance of Katharine Humphreys New York—p 713
Effect of Thyroxine on Metabolism of Isolated Normal and Malignant Tissue O O Meyer Claire McTiernan and J C Aub Boston—p 723
Action of Certain Diuretics on Function of Kidney as Measured by Urea Clearance Test I H Page New York—p 737

Mineral Metabolism in Nephrosis—Hoffman and Post made careful metabolic balance experiments of four patients with nephrotic edema for the relationship of the mineral metabolism to edema. They found that the ingestion of water, sodium or chloride produces a transudation of these substances across the capillary walls to keep the osmotic relations of the plasma and extracellular fluids somewhere near normal, until the excretion by the kidneys restores the normal body content. A low serum protein concentration produces a tendency for accumulation of extracellular fluid because of the lag in the return of fluid into the blood stream. The extent of this accumulation is determined among other factors, by the speed with which the kidneys carry on the excretion of water, sodium and chloride. An adequate excretion of sodium (and therefore of its quota of water and chloride) in nephrosis is apparently possible only when the serum sodium concentration is at a normal or higher than normal level. The serum sodium concentration seems to be related to that of red cell potassium, and factors that raise the latter may raise the concentration of serum sodium and thereby increase the urinary excretion of sodium.

Leukocytosis Following Liver Extract—Powers and Murphy determined the total white cells and the total number and proportion of polymorphonuclear neutrophils in the peripheral circulating blood of twenty-one normal subjects before and after the intramuscular injection of liver extract. The subjects were divided into two groups: those to whom the extract was given at 9 o'clock in the morning and those who received the drug at 5. The first group was further divided in two subgroups, ambulatory and recumbent. The average maximal increase in the total number of white cells of the ambulatory group was 94.1 per cent higher than the average of all control counts and occurred seven hours after the extract was administered. The greatest individual response in this group was 185 per cent and the lowest was 23 per cent above the average of the four control counts made on each of these two subjects the previous day. The average maximal increase in total white cells of the patients of the recumbent group was 72 per cent above the normal level and occurred six hours after the injection of liver extract. The highest and lowest individual responses in the members of this group were 101 per cent and 20 per cent above the normal averages of these two subjects. One patient with influenza accompanied by leukopenia on the first day of the experiment showed a well marked leukocytosis following the injection of liver extract. A similar increase in the total number of white cells and the total number and proportion of polymorphonuclear neutrophils was obtained in the

second group of normal subjects, who received the drug four hours earlier than those of the first group. The leukocytosis in every instance was due to an increase in the polymorphonuclear neutrophils.

Journal of Experimental Medicine, New York

58 1136 (July 1) 1933

- Studies on Suprarenal Cortex II Metabolism Circulation and Blood Concentration During Suprarenal Insufficiency in the Dog G A Harrop A Weinstein L J Soffer and J H Trescher Baltimore—p 1
Id III Plasma Electrolytes and Electrolyte Excretion During Suprarenal Insufficiency in the Dog G A Harrop L J Soffer, R Ellisworth and J H Trescher Baltimore—p 17
Observations on Attempts to Produce Acute Disseminated Encephalomyelitis in Monkeys T M Rivers D H Sprunt and G P Berry New York—p 39
Antigenic Relationship Between Proteus \ 19 and Typhus Rickettsiae Study of Weil Felix Reaction M R Castaneda and S Zia Boston—p 55
Form and Function of Synovial Cells in Tissue Cultures I Morphology of Cells Under Varying Conditions E Vaubel New York—p 63
Form and Function of Synovial Cells in Tissue Cultures II Production of Mucin E Vaubel New York—p 85
Races That Constitute the Group of Common Fibroblasts II Effect of Blood Serum R C Parker New York—p 97
*Studies on Prevention of Cholesterol Atherosclerosis in Rabbits I Effects of Whole Thyroid and of Potassium Iodide K B Turner New York—p 115
*Id II Influence of Thyroidectomy on Protective Action of Potassium Iodide K B Turner New York and G B Khayat Beirut Syria—p 127

Thyroid and Potassium Iodide in Cholesterol Atherosclerosis—Turner observed that whole thyroid when administered simultaneously with cholesterol prevented the atheromatous changes produced by the latter in the aorta of rabbits in seventeen of nineteen animals. Thyroxine was less effective in this series, as atherosclerosis occurred in eight of eleven rabbits. Potassium iodide also exerted a strong protective action as aortic lesions were present in only one of a series of twelve rabbits fed cholesterol and potassium iodide concurrently. The effectiveness of potassium iodide was not shared by potassium bromide or potassium chloride. A relationship was noted between the level of the cholesterol in the blood and the development of atherosclerosis. In general, the aortic lesions accompanied a hypercholesteremia.

Thyroidectomy and Potassium Iodide—According to the studies of Turner and Khayat, thyroidectomy in itself does not cause a rise in blood cholesterol or the development of atherosclerosis in young rabbits. The feeding of cholesterol produces hypercholesteremia and atherosclerotic lesions in rabbits regardless of the presence or the absence of the thyroids. Potassium iodide prevents the usual hypercholesteremia and atherosclerosis of the aorta in normal rabbits fed cholesterol, but when the thyroids are removed this protective action disappears.

Journal of Nutrition, Springfield, Ill

6 313 412 (July) 1933

- Beryllium Rickets B L Guyatt and H D Bramson Toronto Canada—p 313
Studies on Relation of Diet to Goiter I Dietary Technique for Study of Goiter in the Rat II Levine R E Remington and II von Kolnitz Charleston S C—p 325
Id II Iodine Requirement of the Rat II Levine R F Remington and II von Kolnitz Charleston S C—p 347
Effects of Irradiated Ergosterol on Metabolism of Normal Dogs C I Reed E A Thacker I M Dillman and J W Welch Chicago—p 355
*Calcification of Tissues by Fractional Doses of Irradiated Ergosterol C I Reed L M Dillman E A Thacker and R I Klein Chicago—p 371
Variation of Basal Metabolic Rate Per Unit Surface Area with Age II Pubertal Acceleration C Bruen New York—p 383
*Effect of Pear Leaches Apricots and Dried Sulphured Apricots on Urinary Acidity I G Saywell Berkeley Calif—p 397
Iodine Content of Hens Eggs as Affected by the Ration O H M Wilder R M Bethke and P R Record Wooster Ohio—p 407

Calcification of Tissues by Toxic Doses of Viosterol—Reed and his associates made analyses for the calcium and phosphorus content of twelve tissues from thirteen normal dogs and from fourteen dogs that had received by intravenous injection toxic doses of viosterol 10,000 X. Statistical treatment of the data shows that the calcium content of any tissue may be significantly increased by viosterol administration although wide variations may occur certain tissues showing no increase

The magnitude of the increase in the calcium content is not correlated with the viosterol dosage but seems to depend on some undetermined individual factor or factors. The phosphorus content, while widely variable among individual animals, was affected by viosterol administration in a much less constant manner, if at all.

Effect of Certain Fruits on Urinary Acidity—Saywell effected the following results in his experiments with men on a basal diet and on the same basal diet supplemented by pears, peaches, apricots and dried sulphured apricots. 1 An average increase of the urinary reaction of approximately 0.7 pH unit was produced by 1,000 Gm of fresh Bartlett pears, an average of 0.85 pH unit by 1,260 Gm of canned peaches and an average of 1.2 pH units by an equal quantity of canned apricots. An average increase of 1.45 pH units was produced by 300 Gm of dried sulphured apricots. Both kinds of apricots produced alkaline urines. 2 Corresponding decreases in both the ammonia excreted and in the total acidity were noted. The average changes produced by both kinds of apricots were considerably larger than those resulting from either the peaches or pears. 3 There was an increase of the alkali reserve, estimated according to the method of Fitz and Van Slyke, equal to or above the normal for each subject. This increase was marked for both kinds of apricots. 4 There appeared to be a correlation between the alkalinity of the ash and the reaction of the urine in the case of pears and peaches. A more basic reaction was associated with a higher ratio of soluble alkalinity to insoluble alkalinity of the ash. Compared with the peaches the apricots appeared to produce an even more basic reaction with approximately the same ratio of soluble alkalinity to insoluble alkalinity. 5 A slight increase occurred in the organic acids excreted when pears, peaches or the two kinds of apricots were added to the basal diet. 6 The average proportion of oxidations of the organic acids of the pears, peaches and the two kinds of apricots were similar, averaging 94.7 per cent. 7 Apparently the added inorganic sulphur in the apricots does not reduce the basic effect of the apricot on urinary acidity.

Kansas Medical Society Journal, Topeka

34 247 290 (July) 1933

- The Cancer Problem C C Nesselrode Kansas City—p 247
Carcinoma of the Colon H L Snyder Winfield—p 252
Carcinoma of the Breast A O Donnell Ellsworth—p 254
*Black Widow Shoe Button or Hourglass Spider W A Hayward Coffeyville—p 261

Black Widow Spider—Hayward states that the black widow spider is the chief poisonous spider in the United States. It has fangs and a poison sac and is capable of expelling a colorless venom containing a highly neurotoxic element. Persons may not know they are bitten, as the sensation is much like the extraction of a hair or the prick of a pin and no local reaction follows immediately; the spider is frequently not seen. However, a small wheal is present, on the apex of which is found a puncture wound the size of a pinhead. Some itching and burning are noted at the time of the bite. A few hours later a purpuric spot may appear, soon followed by an area of induration and extreme soreness, and frequently a slough occurs at the site. This may be caused by the venom or local infection for cases of pyelitis, cellulitis, septicemia and erysipelas have been reported following the bite of a spider. The general symptoms appear from ten minutes to several hours after the bite depending on its location. Often there is severe pain radiating from the site of the wound and finally extending over the entire body accompanied by nausea, vomiting, dyspnea, persistent hiccups, profuse perspiration and urinary retention. There may be edema of the face, urticarial rash covering the body, accompanied by intense itching, increased blood pressure, leukocytosis and a fever, which seldom reaches 102 F. The symptoms usually subside in a few hours and the patient is able to be about in two or three days. However, several deaths have been reported as resulting from the bite of this spider. The treatment is symptomatic and includes sedatives, elimination and stimulation. Hypodermic injections of morphine are indicated and usually large doses are required. Strychnine and caffeine are useful. Hot packs of a 50 per cent solution of magnesium sulphate over the region of the bite give relief. Good results have been obtained by the use of convalescent serum, but as yet no serum has been manufactured from lower animals.

Kentucky Medical Journal, Bowling Green

31 309 350 (July) 1933

- Recent Advances in Squint J C Peter, Philadelphia—p 319
Birth Injuries H M Rubel Louisville—p 327
Health Officer's View of Relation Between Health Officer and Practicing Physician C W Bushong Tompkinsville—p 329
Whole Time County Health Unit from Point of View of General Practitioner J H Blackburn Bowling Green—p 331
Ruptured Appendix Report of Case C M Edelen Louisville—p 333
Blotomycosis of Face and Arm W U Rutledge Louisville—p 335
Tumor of Cerebellopontile Angle with Presentation of Patient Report of Case G F Doyle Winchester—p 338
Pellagra T M Radcliffe Kora—p 340
Undulant Fever E W Demaree Wonsan Korea—p 343

Laryngoscope, St Louis

13 521 606 (July) 1933

- Value of High Frequency Currents in Nasal Conditions with Probable Benefits in Gastro-Intestinal Disturbances L Cohen Baltimore—p 521
Vasomotor Rhinitis A Trassoff Philadelphia—p 531
Nose and Throat Infections in General Medicine M B Levin Baltimore—p 540
Early Ear, Nose and Throat Manifestations of Icteric Encephalitis A M Zimhan Washington D C—p 549
Fast Approach to Surgical Division of Second Branch of Trigeminal Nerve D J Poi New York—p 554
Hyperostosis Frontalis of External Auditory Canal M A Glatt Chicago—p 558
Primary Icteric Lesion of External Ear Case Report R C Colgan and S S Greenbaum Philadelphia—p 563
Influence of Treatment on Deafness in Children I K Cundrum Los Angeles—p 565
*Tumor of Glossopiglottic Space F J Brighia Philadelphia—p 570
Hodgkin's Disease Lymphosarcoma and Leukemia L F Craver New York—p 575
New Mouth Gag with Interchangeable and Adjustable Tongue Depressors and Anesthetizing Tube W Stupka Neustadt Austria—p 585
New Tonsil Syringe C W Fogarty St Paul—p 589

Lipoma of Glossopiglottic Space—Brighia presents the case of a Negro woman who complained of extreme difficulty in swallowing, with increasing fulness in her throat simulating the presence of a foreign body which she almost constantly endeavored to swallow. Concomitant with these symptoms, she noticed hoarseness, thickness of speech, occasional cervical pain, increased salivation, attacks of cough and difficulty in breathing. Weight was lost progressively although her appetite was good. Food and liquids which she believed to be completely swallowed were frequently ejected from her mouth. External examination of the neck and intranasal examination proved essentially negative for any pathologic changes. Examination of the pharynx revealed a single tumorous swelling just posterior to the base of the tongue. The apex of the growth (the size and shape of a small pear) pointed downward toward the larynx, its base extended just above the dorsum of the tongue and it was attached by its pedicle to the glossopiglottic space. It bobbed up and down with each attempt to swallow. A Lewis snare was applied over the mass around the pedicle and the tumor removed. This was followed by a negligible oozing of blood from the stump which stopped readily. Gross examination of the specimen revealed a lipoma confirmed by histologic examination. It weighed 14 Gm and was 4.5 cm long, 3 cm wide and 3.5 cm in thickness. Three days later the patient was reexamined by the laryngoscope, and it was found that there remained some of the stump of the growth formerly removed. This was removed with a snare and cupped forceps. Several days later following the removal of the remaining tissue, the surface of the glossopiglottic space was smooth, healing complete and recovery uneventful.

Medical Annals of District of Columbia, Washington

2 153 176 (July) 1933

- Thorotrast Arteriography and Venography L S Otell F O Coe and O F Hedley Washington—p 153
*Diagnosis of Diseases of Liver with Especial Reference to Thorotrast Hepatosplenography W M Yater Washington—p 156
Some Observations and Considerations of Diagnosis and Treatment of Surgical Mastoiditis R A Kearny Washington—p 160
Preoperative and Postoperative Management of Gout Patients H F Strine Washington—p 165
Etiology of Rheumatic Fever Review of Investigative Work on Subject O F Hedley Washington—p 168

Hepatosplenography—Yater states that thorium dioxide hepatosplenography has its greatest place in the diagnosis of those diseases of the liver which are not regularly associated

with jaundice, particularly cirrhosis, syphilis, metastatic carcinoma and primary neoplasia. In atrophic cirrhosis, one of two appearances is presented in the roentgenogram. Either the liver, which is usually shown to be small, is diffusely mottled, or it is of homogeneous density but less dense than normally. In both types of cirrhosis there is always a moderate splenomegaly. Syphilitic cirrhosis may resemble atrophic cirrhosis pathologically so closely that it gives a roentgen appearance indistinguishable from it. But in that type of gummatous syphilis of the liver which results in gross deformity from scarring, a distinctive picture results. The liver is seen to be greatly lobulated and deformed, and it is frequently less dense than normally. Metastatic lesions appear as more or less round, nonopaque usually multiple areas, surrounded by a halo of increased density. This appearance is due to the fact that cancer tissue does not contain reticulo endothelial cells. In addition, the spleen is practically never found to be enlarged. A primary neoplasm is diagnosed when a rounded, nonopaque area is seen without the halo of increased density. In diffuse primary carcinoma, the picture resembles closely that of cirrhosis. Abscesses and cysts in the liver are readily visualized. It is possible that traumatic rupture may be detectable.

Medical Journal and Record, New York

138 136 (July 5) 1933

- Appendicitis from the General Practitioner's Point of View D Stetten New York—p 1
Is Phrenicotomy or Exeresis Without Danger and as Simple as Assumed? W Meyer Union City N J—p 6
Peritonillar Abscess Its Rapid Relief J B H Waring Cincinnati—p 7
Concepts of Endocrinology S J Essenson New York—p 8
Air Conditioning the Operating Room Use of Lower Operating Room Temperature with Natural Ventilation C H Sanford and A Stein New York—p 10

Military Surgeon, Washington, D C

73 160 (July) 1933

- Organized Medical Services at Fort Benning Georgia I S Falk—p 1
Indications for Phrenic Exeresis W C Pollock—p 13
Historical Note Concerning Ulceromembranous Angina from Fusospirochetes (Bacillus fusiformis and Spirochaeta Vincenti) H Vincent—p 17
Window Screen Fly Trap A P Hitchens—p 20
Joint Training of Army and Navy Medical Reserve J R Hall and R H Hunt—p 29

Missouri State Medical Assn Journal, St Louis

30 263 308 (July) 1933

- The Practice of Medicine in Individual Service President's Address J W Love Springfield—p 263
Organized Medicine Best Weapon Against Socialized Medicine Address of President Elect W L Allee Eldon—p 264
The Tuberculosis Problem in Missouri Methods and Means for Its Better Control S P Child Mount Vernon—p 265
Treatment of Pain in Chronic Arthritis D E Kauffman St Louis—p 273
Menstrual Cycle and Pregnancy with Simple Pregnancy Diagnostic Test Preliminary Observations D M Dowell Chillicothe—p 275
Vegetal (Peanut) Bronchitis R L Bower Kansas City—p 277
Pre-ent Day Status of Heart Disease O P J Fall St Louis—p 280
Dispensing as an Art J F Chandler Oregon—p 285

Menstrual Cycle and Pregnancy—Dowell attempts to correlate present supposed knowledge of ovulation menstruation and pregnancy. His test for pregnancy consists of injecting intradermally a few minims of urine from the patient into the flexor surface of the arm. A positive test will reveal an intradermal wheal with negative reaction signifying pregnancy. A negative test gives a typical erythematous intradermal wheal with reaction signifying absence of pregnancy.

Nebraska State Medical Journal, Lincoln

18 41240 (Jul) 1933

- Use of Carbohydrates in Diet and Treatment of Infants A F Abt Chicago—p 41
Training of a Surgeon J F Langdon Omaha—p 246
Prognosis in Surgery of Old men Digen is and Prognosis from Point of View of Surgeon J F Sumner Omaha—p 248
Statistical Study of Six Hundred and Sixteen Cases of Distal Esophagus Cancer Omaha—p 1
Uterine Discharges W H Tawl Omaha—p 255
Incision of Thigh H H Davis Omaha—p 257
Suture of Thigh M F Barrett Omaha—p 259

New England Journal of Medicine, Boston

209 150 (July 6) 1933

- Appendicitis in Pregnancy Analysis of Sixty Five Cases E d Errico Boston—p 27
Pericolic Abscess Secondary to Carcinoma of Colon A Starr and L H Nason Boston—p 34

209 51116 (July 13) 1933

- A Tribute to Dr Robert B Osgood Introduction by F R Ober Boston Foreword by R Jones—p 51
Tendon Transplantation in Lower Extremity F R Ober Boston—p 52
*New Operation for Slipping Patella R Soutter—p 59
*Tensor Fasciae Femoris Transplantation in Cases of Weakened Gluteus Medius A T Legg Boston—p 61
Changes in Epiphysis Secondary to Infection J W Sever Boston—p 62
Congenital Torticollis Review of Pathologic Aspects H J Fitz Simmons Boston—p 66
*Countersinking the Astragalus in Paralytic Feet A H Brewster Boston—p 71
Flexion Deformity of Hip and Lateral Intramuscular Septum S M Fitchet Boston—p 74
Foot Stabilization Review of Fifty Two Operations R H Morris Boston—p 78
Tuberculosis in Infancy and Childhood Statistical Study Miriam G Katzell Boston—p 83

Operation for Slipping Patella—Soutter outlines an operation for slipping patella in which, after the position for the supporting fascial ligament is selected, an incision is made above or below this line so that a flap may be turned back down to the fascia. The patella is tunneled obliquely from above downward and from without medially. At about the middle of this tunnel a window is opened in the top. A similar tunnel is made in the tibia in approximately the same line and well to the mesial side of the tibia. Through the ridge of bone that overlies the fascia on the mesial side of the tibia a tunnel is made with an osteotome instead of drilling. While the osteotome is in place in the tunnel, a window is cut down to it through the overlying fascia. The ligament in the patella is passed from the mesial side of the tunnel upward and the loose end, as it emerges from the outer side of the patella, is folded over the top of the patella and tucked in through the window, emerging below at the entrance to the tunnel on the mesial side of the patella. Two catgut sutures are placed in the fascia. In a similar way the fascial ligament is tucked in on the outer side of the tibial tunnel. The loose end is then brought out at the mesial side of the tibia folded over and tucked in through the window. The two loose ends are approximated passed through each other twice and sutured with catgut.

Tensor Fasciae Femoris Transplantation—Legg reports an operation to strengthen the abductor power of the thigh in cases in which the gluteus medius has been weakened by infantile paralysis by transplanting the origin of the tensor fasciae femoris backward along the crest of the ilium to directly above the great trochanter. The incision is made along the crest of the ilium starting a little behind the middle and going forward to the anterior superior spine then downward along the inner border of the tensor fasciae femoris to the mid thigh. The skin and subcutaneous fat are reflected back, exposing the fascia lata. The fascia between the tensor fasciae femoris and the sartorius is divided the division being carried down along the anterior border of the tensor fasciae femoris and continued down along the anterior border of the iliotibial band. At this stage the fascia must be freed from the great trochanter anteriorly in order to get the muscle directly over the trochanter. The leg is abducted about 35 degrees and the origin of the muscle is sutured with number 18 silk to the crest in a line directly above the great trochanter. The subcutaneous fat is then sutured with catgut the skin with black silk. A dressing is applied and the leg is put into a braked plaster spica which has been made previously to maintain the position of 35 degrees abduction. It is the author's custom to dress the wound on the eighth or ninth day and to begin light muscle training at the end of twelve days increasing it gradually. The patient is allowed to walk in an abduction splint at the end of six weeks. The abduction splint is removed at the end of three months.

Countersinking the Astragalus in Paralytic Feet—The technique of Brewster for countersinking the astragalus in paralytic feet is as follows. An incision is made on the lateral side of the foot from the head of the astragalus convex down

ward to the posterior superior surface of the os calcis. Through this incision the skin and subcutaneous tissues are divided. The peroneal tendons, peroneus longus and brevis are exposed and retracted from the field of operation. The fossa between the inferior surface of the astragalus and superior surface of the os calcis is denuded of tissue. Beginning at the junction of the neck and body of the astragalus, its inferior surface is removed in a plane parallel to the sole of the foot. Taking advantage of the bony elevation on the anterior superior surface of the os calcis, a chisel is driven through the os calcis at right angles to the sole of the foot and just posterior to the cartilage of the calcaneocuboid joint, from the lateral side to the medial. At right angles to this, the superior surface of the os calcis is removed parallel to the sole of the foot anteroposteriorly, until all the cartilage of the os calcis taking part in the joint between the astragalus and os calcis is removed. The head and neck of the astragalus are next removed at right angles to the sole of the foot, so as to remove part of the cartilage on the superior surface of the astragalus, which forms the joint between the tibia and the astragalus. After the foot is displaced backward, it is then determined at what point the posterior part of the astragalus and os calcis are to be removed. The posterior part of the astragalus is removed at right angles to the sole of the foot. Next, as much of the bony prominence on the posterior superior surface of the os calcis is removed at right angles to the sole of the foot as is necessary. The two right angles are made to fit as the two anterior ones were, and the countersinking of the astragalus is accomplished. This procedure gives lateral stability, and it limits plantar flexion and dorsiflexion to the degree desired. The foot appears nearly normal and is functionally good.

New York State Journal of Medicine, New York

33 791 856 (July 1) 1933

- The First Decade of the Second Century of the Medical Society of the County of Kings. I. D. Jennings. Brooklyn—p. 791.
 *Influence of Trauma in Acute and Chronic Encephalitis. A. M. Rabiner. New York—p. 796.
 Mortality in Nine Hundred and Eighty Five Cases of Diabetes Mellitus. J. Hajek. New York—p. 802.
 Role of Child Guidance in Prevention of Schizophrenia (Dementia Praecox). H. L. Levin. Buffalo—p. 803.
 Are X Rays of Value in Treatment of Ringworm of Hands and Feet? R. J. Kelly. New York—p. 813.
 Psychoanalytic Factors in Family Discord. C. P. Oberndorf. New York—p. 815.
 Chronic Duodenal Obstruction. R. Golden. New York—p. 819.
 Some X Ray Evidences of Meningiomas. C. W. Schwartz. New York—p. 824.

33 857 906 (July 15) 1933

- Acute Hyperthyroidism. Thyroid Crises. F. H. Lahey. Boston—p. 857.
 Some Additions to Our Radiologic Armamentarium in Treatment of Esophageal and Laryngeal Cancer. W. L. Mattick. Buffalo—p. 863.
 Cardiospasm and Other Obstructions of Upper Gastrointestinal Tract in the New Born. J. Aikman. Rochester—p. 865.
 The State Medical Examiner. L. Braddy. New York—p. 873.
 Squamous Cell Epitheliomas of the Skin of the Face. Report of Twenty Six Cases. E. F. Traub and J. A. Tolmach. New York—p. 875.
 Study of Secondary Cases of Scarlet Fever. W. H. Best. New York—p. 881.

Trauma and Encephalitis—Rabiner presents a series of cases with a clinical picture of epidemic encephalitis in which the chief interest is a history of trauma. He attempts to determine what effect such traumas may have on this disease. Cases are presented in which the trauma plays an important part in the production of epidemic encephalitis and, similarly, other cases in which the trauma is simply a coincidental or chance occurrence. He concludes that, following an injury to the head in which there is evidence of intracranial involvement, the minimal degree being a cerebral concussion, a later developing epidemic encephalitis syndrome must be regarded as having been influenced in its production by the trauma. A patient who has had an acute epidemic encephalitis may have chronic manifestations, such as parkinsonism initiated or produced by an injury to the head. Such an injury must be severe enough to produce at least the symptoms of cerebral concussion. A partial clinical evidence of chronic encephalitis, such as a tremor of the hand or the loss of associated movements, may be regarded as indicative of the full syndrome developing. If such an individual then has an injury, the advance in symptoms

is not attributable to the trauma. An injury to any portion of the body, excepting the skull, particularly when not associated with signs of cerebral concussion, plays no part in the clinical course of epidemic encephalitis.

Oklahoma State Medical Assn Journal, Muskogee

26 239 272 (July) 1933

- Headache. J. I. le Hew. Guthrie—p. 239.
 Neurologic Headache. N. R. Smith. Tulsa—p. 244.
 Cynecologic Headaches. J. W. Kelso. Oklahoma City—p. 245.
 Ophthalmologic Headache. C. M. Fullenwider. Muskogee—p. 247.
 Headache of Nasal Origin. W. O. Smith. Tulsa—p. 249.
 Headache from Strainpoint of Otolologist. A. S. Piper. Enid—p. 251.
 Venous Pressure and Its Clinical Significance. H. R. Rothman. Muskogee—p. 253.
 Sarcoma of Orbit. L. C. Kuykendall. McAlester—p. 255.
 Are All Pulpless Teeth a Menace to Health of Patient? S. G. Weiss. Muskogee—p. 258.

Pennsylvania Medical Journal, Harrisburg

36 739 814 (July) 1933

- Otic Complications as They Occur in Everyday Otolaryngology. S. J. Kopeitzky. New York—p. 739.
 *Nirvanol Treatment of Chorea. R. H. Dennett. New York—p. 748.
 Tibial Lengthening and Femoral Shortening. J. R. Moore. Philadelphia—p. 751.
 Serious Head Injuries. Neurologic Considerations. C. H. Henninger. Pittsburgh—p. 756.
 Id. Ocular Signs and Symptoms of Brain Trauma. T. H. Manley. Jr. Tarentum—p. 758.
 Id. Management of Head Injuries. S. S. Allen, Jr., Pittsburgh—p. 761.
 Hematuria. H. D. Ritchie. Pittsburgh—p. 763.
 Calcium Phosphorus and Parathyroids. Their Association with Diseases of Bone. R. C. Grauer. Pittsburgh—p. 765.
 Electrocoagulation of Tonsils. Its Use and Abuse in Nose and Throat Surgery. J. J. Sullivan, Jr. Scranton—p. 768.
 Ureterocele of Reduplicated Ureter. L. B. Greene, Philadelphia—p. 773.

Nirvanol Treatment of Chorea—Dennett treated ninety three cases of chorea with nirvanol, a urea and glycol preparation phenylethylhydantoin. The attacks have terminated favorably in all. The patient should be put to bed for observation for two or three days before the drug is used in order to ascertain that he is not suffering from any other disease. From 5 to 15 grains (0.3 to 1 Gm.) of nirvanol is given daily, the latter dose being given to large heavy children. The author's maximum dosage was 215 grains (14 Gm.) for the entire period. The average dosage was 80 grains (5.2 Gm.) for the entire period of treatment. Usually the drug is given for from seven to ten days, and following its withdrawal there is a rest period of two weeks in bed. The drug has brought about a train of symptoms resembling an acute exanthem in children. The drowsiness begins on the third or fourth day and varies extremely in intensity. The density of the stupor is alarming but it is a natural quiet sleep and there are no ill effects. Smaller doses should be given in the summer. The drowsiness varies from sleepiness to stupor, and, unless it is too deep and accompanied by prostration, it is not an indication for stopping the treatment. Along with this drowsiness, which clears up in two or three days after withdrawal of the drug there is an exacerbation of the choreiform movements. The child becomes more active when awakened. Fever appears about the seventh or eighth day. It has been more than 102 F in 40 per cent of the patients, less than 102 F in 40 per cent, and in 20 per cent there has been a temperature of 100 F or below. The duration of the fever is four or five days, and when the temperature rises it is best to stop the drug. Two indications for stopping the drug are fever and rash. The rash also appears about the seventh or eighth day. The rash varies—sometimes it is like measles, or an urticaria or even an edema of the eyelids, or a scarlet fever rash with hyperemia of the soft palate. It disappears in four or six days.

Public Health Reports, Washington, D. C.

48 787 808 (July 7) 1933

- Rocky Mountain Spotted Fever. Susceptibility of the Dog and Sheep to the Virus. L. F. Badger—p. 791.
 Typhus Fever. Experimental Transmission of Endemic Typhus Fever of the United States by Xenopsylla Astia. W. G. Workman—p. 795.

48 809 838 (July 14) 1933

- Outbreak of Dermatitis Among Workers in Rubber Manufacturing Plant. L. Schwartz and L. Tulipan—p. 809.
 Food Habits of Colpidium. Note. C. T. Butterfield—p. 814.

Southern Medical Journal, Birmingham, Ala.

26 575 664 (July) 1933

- *Treatment of Hookworm and Other Intestinal Helminth Infections with Hexylresorcinol Under Field Conditions in Central America Preliminary Report D M Molloy San Jose Costa Rica—p 575
- Appraisal of Value of Vaccine Therapy in Chronic Arthritis S R Miller Baltimore—p 583
- Etiology and Pathogenesis of Renal Infections R M LeComte, Washington D C—p 589
- Symptomatology and Diagnosis of Renal Infections W H Toulson Baltimore—p 593
- Treatment of Renal Infections (Nontuberculous) H A Fowler Washington D C—p 596
- Survey of Present Status of Endocrinology in Its Relation to Dermatology J W Jones and H S Alden Atlanta Ga—p 603
- Hirschsprung's Disease Its Pathologic Physiology and Apparent Cure of Two Cases Under Observation for Two and Three Years Following Sympathectomy E C Mitchell and R E Semmes Memphis Tenn—p 606
- Organization of Research in Clinical and Preclinical Departments R S Cunningham Nashville Tenn—p 615
- Treatment of Intractable Laryngeal Papilloma in Adults Case Report L Cohen Baltimore—p 621
- Papillomatosis Laryngis J H Foster Houston Texas—p 625
- Ovarian Abscess W T Black Memphis Tenn—p 630
- Bleeding During the Puerperium R A Johnston L A Myers and H W Johnson Houston Texas—p 636
- Acute Injuries to the Abdomen J S Turberville, Century Fla—p 639
- Treatment of Fractures in Children by the Use of Skeletal Traction W K West Oklahoma City—p 644
- Psychiatric History of Three Families Modifying Heredity S T Rucker, Memphis Tenn—p 646
- Pellagra Review of Recent Literature G A Wheeler Washington, D C—p 648

Treatment of Hookworm with Hexylresorcinol—Molloy administered a total of 1,784 treatments of hexylresorcinol. No toxic symptoms from the drug were observed. Slight gastric irritation occurred occasionally, but nausea was rare and vomiting did not occur. Owing to the action of hexylresorcinol on the gelatin of capsules, the drug is best administered in sugar-coated pills. Full therapeutic (1 Gm) doses of the drug removed from 65 to 72 per cent of hookworms under field conditions. The efficacy of the drug is greatly lessened if it is not given on an empty stomach or if food is taken shortly after administration. The efficiency of the drug would probably be increased if the intestinal tract were cleared of extraneous matter by a purge and this would be a procedure that could be recommended in the treatment of individual cases. From 93 to 98 per cent of the ascarids harbored by the patients were expelled by a single treatment. In the treatment of whipworm infestations the drug appears to be less effective than earlier reports indicated. It appears, however, to be the most effective drug against this parasite at the present time. Only the latex of the higuero (wild tropical fig *Ficus hirsutifolia*) removes a larger percentage of the worms. The administration of a purge two hours after the drug lessens its anthelmintic effect. Owing to its delayed action phenolphthalein may be administered simultaneously with the drug without lessening its efficiency against hookworm and ascaris. If saline purgatives are employed these should not be administered until several hours later preferably the following morning. In the treatment of hookworm disease, a single dose of hexylresorcinol lessens the worm burden to the extent that the patient is relieved of most of the symptoms. It does not entirely eliminate the danger to others since the majority of persons treated still harbor a sufficiently large number of worms to be considered carriers. In treatment campaigns that are being conducted for the purpose of reducing mass infection, a second treatment (preferably of some anthelmintic possessing a more selective action against hookworm, such as tetrachlorethylene carbon tetrachloride or thymol) would seem to be indicated.

Tennessee State Medical Assn Journal, Nashville

26 273 320 (July) 1933

- Diagnostic Clinics President's Address R C Reaves Knoxville—p 273
- Some Aspects of Vulvar Neuralgia H H Nail Cincinnati—p 276
- Throat Infections in Infants and Children I M Lee Nashville—p 280
- Peritoneal Drainage When Indicated and When Not E D Newell and P C McNeill Chattanooga—p 285
- The Flight from Reality S T Tucker Memphis—p 287
- Acral Dermatitis A H Iancu Knoxville—p 291
- Acute Erythema in Children M B Davis Nashville—p 296
- Eye Injuries F I Warren Nashville—p 301
- Fetal Calcification I Morgan Memphis—p 305

Texas State Journal of Medicine, Fort Worth

29 173 232 (July) 1933

- Is the American Medical Association Essential to the Welfare of the Public? E H Cary Dallas—p 180
- New Developments in Irradiation Therapy of Breast Cancer C L Martin, Dallas—p 186
- Lymphopathia Venerea C F Lehmann and J L Pipkin San Antonio—p 192
- Relapsing Fever in Texas and Laboratory Method of Diagnosis S W Bohls and V T Schuhardt Austin—p 199
- Suture of Stab Wound of Heart Report of Case J F Clark, Abilene—p 203
- Bacteriophage Therapy B F Stout San Antonio—p 205
- Treatment of Varicose Ulcers P Riddle Dallas—p 210
- *Treatment of Pellagra Results Obtained by Liver Extract Used Parenterally in Twenty Five Cases R L Ramsdell Dallas—p 211
- Pituitary Ovarian Therapy in Gynecologic Disorders H H Latson Amarillo—p 214
- Episcleritis R A Duncan Amarillo—p 216

Treatment of Pellagra—Ramsdell treated twenty-five cases of pellagra with liver extract, intramuscularly, without a death and with rapid clinical improvement. He believes that, in severe cases or in patients with marked depression who refuse to eat, liver extract will save many who would not recover under dietary treatment. A combination of liver extract and dietary treatment would probably give better results than either alone. The author's treatment consisted of a general diet without the addition of any foods known to be rich in vitamin G. The patients were kept in bed and given 2 cc of liver extract no 343 intramuscularly, once a day. No medication of any kind was used, and the skin lesions were left open and untreated. There were no systemic reactions from the injections, and none of the patients objected seriously to them. The injections were usually given in the deltoid or gluteal muscles. The amount of liver extract required for various patients will vary according to the amount of existing deficiency. The author does not attempt to assign any definite reason why liver extract should be an effective treatment for pellagra but believes that its vitamin B₂ content is the cause.

Virginia Medical Monthly, Richmond

60 199 264 (July) 1933

- Cancer of Colon and Rectum J S Horsley Richmond—p 199
- Recent Progress in Prostatic Surgery D S Daniel Richmond—p 207
- Treatment of Malignant Neutropenia Regena C Beck Richmond—p 210
- Undulant Fever and Its Relation to Brucella Infection (Contagious Abortion) in Cattle and Swine in Virginia Preliminary Report L E Starr Blacksburg and K T Maxcy University—p 218
- *Ulcerative Syphilitic Lesions of the Stomach Pathologic Anatomy of Four Cases L C Pusch Richmond—p 227
- Delivery H J Langston Danville—p 232
- Early Phases of Locomotor Ataxia H C Grant Remington—p 236

Ulcerative Syphilitic Lesions of the Stomach—The criteria on which Pusch made diagnoses of syphilis of the stomach in four cases are (1) clinical courses typical of those generally accepted as characteristic of gastric syphilis, (2) achlorhydria in three cases, subacidity in the fourth, (3) a positive Wassermann reaction in three, in which case syphilitic infection was manifest in the presence of classic gummas in perigastric lymph nodes, and (4) an associated gastric lesion of the structural features constant in all cases, features not characteristic of other known lesions of the stomach but histologically characteristic of syphilis. As pointed out by Warthin, the characteristic lesion of tertiary syphilis consists of perivascular aggregations of plasma cells and lymphocytes associated with proliferation of fibrous tissue. Such lesions are not pathognomonic of syphilis, yet differences in degree composition and disposition can be detected between the average syphilitic and the average nonsyphilitic lesion. The gumma is the classic lesion of tertiary syphilis but not the characteristic lesion. In the author's cases the sparsity of gummas and the absence of a structural disintegrative type of necrosis and the paucity and the small size of the giant cells suggest a nontuberculous nature. Fungi were not observed. There was no indication of neoplastic disease. In all four cases the lesion consisted of a shallow ulceration of irregular outline, several centimeters in diameter located at the pylorus with annular involvement of the orifice sometimes continued into the duodenum. The bordering mucosa usually was hyperplastic and edematous. The wall at the site was thickened and indurated. The annular shape

of the lesion with irregular margin, distinct from the smaller, round, deep, peptic ulcer, conforms with the configuration assumed by syphilitic lesions of the intestine, including rectal strictures

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Physical Medicine, London

S 33 52 (July) 1933

- Effects of Diathermy on Internal Secretions F Nagelschmidt—p 34
Diathermy Treatment of Rheumatic Disorders J Van Breemen—p 37
Diathermy and Deafness D McKenzie—p 39
Diathermy in Treatment of Diseases of Skin K Sibley—p 41
Observations on Value of Diathermy in Treatment of Disorders of Nervous System I D Bailey and G Duckworth—p 42
Physical Properties of Diathermy Current B D H Watters—p 44
Practical Dietetics J N Leitch—p 46

British Journal of Tuberculosis, London

27 99 146 (July) 1933

- Man and Machines Clinicians and Technical Contrivances for Diagnosis of Tuberculosis of Lungs H B Shaw—p 99
Treatment of Laryngeal Tuberculosis by Light Review of Methods and Results E A Underwood—p 104
*Intravenous Urography in Diagnosis of Tuberculosis of Kidney C H A Pask—p 112
Causes and Treatment of Pleural Effusion and Empyema L S T Burrell—p 122
The Tuberculous Cripple W B Foley—p 126

Intravenous Urography—In the diagnosis of tuberculosis of the kidney by intravenous urography Pask carries out the injection as in any intravenous injection, using an ordinary 20 cc syringe and injecting the contents slowly. It has been his practice to take a series of roentgenograms at intervals of five ten, twenty and forty minutes after the injection because in a single roentgenogram some part of the ureter or pelvis, or both, will be in systole and that part will not contain any of the contrast substance. The only parts delineated in a given roentgenogram are those that are in diastole at the time of taking the urogram. The dynamics are constantly changing owing to peristalsis. By intravenous urography visualization of both sides of the urinary tract and the relations between the various parts can be studied in a series of roentgenograms. It is thus possible to demonstrate the presence of both kidneys and to contrast their relative functional activity. It has been proved by animal experiment that neopax (known abroad as uroselectan B) is excreted by the glomeruli of the kidneys and not by the tubules and that before it passes into the renal pelvis, the general outline of the kidney is often well seen because the contrast substance is present in the glomeruli of the kidney. As the neopax passes to the calices and pelvis and along the ureters, any abnormality can be noted. In cases of tuberculosis of the kidney there is frequently seen irregularity of the outline of the pelvis and calices and dilatation of the ureter. If the kidney substance is completely destroyed on one side, no urogram will be obtained on that side. Neopax, 5 per cent, in the urine is said to be sufficient to give a roentgenogram. In normal kidneys a good roentgenogram is sometimes obtained as early as five minutes after injection, but in the tuberculous kidney the rate of excretion is retarded and occasionally six hours is necessary before a sufficiently dense pyelogram is obtained.

British Medical Journal, London

2 142 (July 1) 1933

- Obstetric Errors E F Murray—p 1
Pancreatic Lithiasis S N Sennett—p 3
Acute Psoas Abscess B R Sworn—p 6
*Recurrent Volvulus of Pelvic Colon D Ligat and T D Overend—p 7
*Osteitis Deformans Treated with Parathormone Case G H Colt and A Lyall—p 10
Multiple Gastric Ulcers Case A W Adams—p 11
Chronic Perforating Ulceration of Foot Observations on Case Treated by Lumbar Sympathectomy T G I James and N M Matheson—p 12

Recurrent Volvulus of Pelvic Colon—The study of twelve cases has convinced Ligat and Overend that recurrent sigmoid volvulus is a frequent source of obscure symptoms.

Excessive length of the pelvic colon may be due to congenital elongation, apparently due to arrested development of the mega sigmoid colon, associated with gross dilatation of the lumen, or the acquired type of colon due to dietetic habits. The primary factor in volvulus of the pelvic colon is its abnormal length. The secondary factors are elongation of the pelvic mesocolon, narrowing of the base of attachment of the pelvic mesocolon to the sacrum, and formation of an axis of rotation by adhesions or by close approximation of the entrance and exit loops of a coil of intestine. The authors classify provisionally the types of recurrent sigmoid volvulus into three groups. 1 The first type shows severe and continuous constipation, perhaps with some discomfort or aching in the back or abdomen. Some are chronic and do not show anything in the way of a crisis; in others a minor crisis occurs periodically, in which the symptoms are accentuated. 2 The second group may either have some constipation during the latent period or may be free from symptoms during this time. These patients are subject to recurrent attacks of torsion, causing severe spasmodic pain and local distention of the intestine but the torsion is not sufficient to occlude the veins. 3 In the third group the torsion during a crisis is more marked and interferes with the venous return. In such cases recurrent attacks of severe pain occur with local distention and watery or blood stained diarrhea. The venous congestion induced by the twist causes a transudation into the intestinal lumen, which is stored in the affected loop until it is set free by spontaneous reduction when it appears as diarrhea watery or blood stained according to the degree of torsion. The occurrence of the diarrhea after rather than during the attack of pain is thus a point of diagnostic importance. The gratifying results following excision of the redundant loop have confirmed the authors in the opinion that this is the method of choice. In cases in which the operation is contraindicated an attempt should be made to relieve the symptoms by fixation of the loop while in patients who are obviously bad surgical risks recourse must be had to such methods as colonic lavage and mild aperients and the adoption of a diet in which the indigestible residue is reduced to a minimum.

Osteitis Deformans Treated with Parathyroid Extract—Colt and Lyall report a case of osteitis deformans in which the administration of parathyroid extract caused consolidation to be rapid and the repair of the fracture to undergo a normal course. The extract has been given in a dosage of from 5 to 10 units daily, with periods of intermission, during the past two years. Acid sodium phosphate well diluted in water, was given three times a day in 1.95 Gm doses as an adjuvant to depress the absorption of calcium in the intestine, to decrease the calcium content of the serum and to promote the excretion of calcium in the urine. Sodium phosphate alone was found to be effective in the mobilization of deposits of calcium in a case of calcinosis. The authors had no facilities for estimating the effect of parathyroid extract treatment by a balanced experiment, but comparison of a series of roentgenograms of the head suggests that there is less calcification present in the skull than there was two years ago.

East African Medical Journal, Nairobi

10 67 97 (June) 1933

- *Subtertian Malaria Parasite of Kenya Note P C C Garnham—p 68
Xerophthalmia in Mathari Mental Hospital H I Gordon—p 85
Considered Opinion as to the Best Treatment of Bilharzia Disease F G Cawston—p 90

Subtertian Malaria Parasite—Garnham states that the Kenya subtertian parasites frequently appear as large nonanular bodies occupying from one fourth to one half of the red blood cell. Classic ring forms (when present) eventually grow into bodies in the peripheral blood in all instances. Pigmented parasites are not uncommon in the peripheral blood. The color of the pigment is primarily yellow. It becomes circumscribed in a definite vacuole. An accolé phase (peripheral adherence) may develop late in the cycle and is followed in typical cases by a nonparasitic interval. Maurer's clefts are constantly found in the infected cells, which are often slightly enlarged and paler than normal. Schizonts are fairly common in nonmalignant active cases of the disease. Schizonts are larger than usual, sometimes even filling the red blood cor-

puscles. Crescents possess a well defined peripheral thickening or ectoplasm, both in the mature and in the developing stage. The half grown gametocyte is accompanied by a curious object—a single bar (later curling up into a loop circle or ellipse) in the red blood cell. The cycle of the parasite occupies exactly forty eight hours. Splenic enlargement was appreciable in only about a fourth of 243 hospital cases. The characteristic features of the parasite are reproduced in subinoculation cases. The local parasite can be differentiated with certainty from the classic species and likewise from all other species of human malarial parasites, with the possible exception of *Plasmodium tenue* with which it may be identical.

Edinburgh Medical Journal

40 321 364 (July) 1933

Carcinoma of the Rectum. An Anatomicopathologic Study. W. Q. Wood and D. P. D. Wilkie—p. 321

*Paralysis of Recurrent Laryngeal Nerve. Survey of Two Hundred and Thirty Five Cases. A. B. Smith, V. F. Lambert and H. L. Wallace—p. 344

Paralysis of Recurrent Laryngeal Nerve—According to the survey of Smith and his associates paralysis of the recurrent laryngeal nerve occurs more frequently in men than in women in the proportion of 2 to 1. Paralysis of the left recurrent laryngeal nerve is of much more frequent occurrence than paralysis of the right nerve. Goiter is the most frequent causal factor of the paralysis in women and implicates the right nerve as often as the left. The commonest causes of the paralysis in men are aneurysm of the aorta and mediastinal tumor. In the majority of cases, paralysis of the recurrent laryngeal nerve should be regarded as a grave sign, especially in men. The majority of paralyzed vocal cords observed in this study occupied the cadaveric position. A paralyzed vocal cord irrespective of its position, may completely recover function. This occurs mainly in those cases in which no cause for the paralysis can be discovered. The original aphonia resulting from a permanently paralyzed vocal cord will ultimately show considerable improvement, and complete recovery of the voice may occur within one year.

Glasgow Medical Journal

2 140 (July) 1933

Spontaneous Subarachnoid Hemorrhage. A. Patrick—p. 1

*Serum Treatment of Ulcerative Colitis. Note. D. Smith—p. 9

Some Aspects of Bright's Disease. N. Morris—p. 14

Treatment of Colitis—To establish sound treatment of ulcerative colitis, Smith emphasizes that the diagnosis should be based on a careful history and examination of the stools, a sigmoidoscopic examination performed without an anesthetic and with a minimum of inflation and an examination of a swab taken directly from the ulcerated or inflamed surface of the colon. During the past three years the author has treated six cases of ulcerative colitis with Bergen's serum. The patients have all been women, and the disease had been present for periods varying from six months to three years. Two were treated by intramuscular injections and four by the intravenous route. The amount of serum used varied from 15 to 50 cc in divided doses. In all six patients the loss of weight up to the commencement of treatment was 35 pounds (16 Kg) or more, and all have regained their lost weight except one who has regained 21 pounds (9.5 Kg) and is still gaining. In the intravenous method of administration the anaphylactic shock is sometimes alarming. The intravenous injection of from 1 to 2 cc of 1:1000 solution of epinephrine immediately after the serum has been given is the best method of minimizing the shock. The shock is not very distressing until 15 cc of serum is injected. When the reaction is severe it takes about an hour before the patient feels comfortable. With the intramuscular route there is practically no reaction. After preliminary preparation of the patient serum treatment is commenced with 1 cc of Bergen's ulcerative colitis antistreptococcus serum. The dose is increased gradually every day or every second day until 5 cc is reached. As improvement proceeds the time interval between the injections can be increased although not more than three days should be allowed to elapse as the shock is more profound after a longer interval. The shortest period of time required for clinical cure has been

nine days, and the longest thirty-six days. This does not represent the length of time required to bring the patient to a state of physical fitness but only the length of time necessary to check the diarrhea. The author has seen these patients regularly over periods ranging from six months to three years, and so far no relapses have occurred.

Journal of Anatomy, London

67 491 634 (July) 1933

Blood Supply of Lateral Geniculate Body with Note on Morphology of Choroidal Arteries. A. A. Abbie—p. 491

Development and Myelination of Posterior Longitudinal Bundle in the Human. M. F. L. Keene and E. E. Hewer—p. 522

Medial Geniculate Body and Nucleus Isthmi. W. E. Le Gros Clark—p. 536

External Characters of Australian Fetus. F. Wood Jones—p. 549

Development of Vagina in Rabbit. J. S. Baxter—p. 555

Chorio Allantoic Grafts of Single Somites and of Unsegmented Paraxial Region of Two Day Chick Embryo. P. D. F. Murray and D. S. Selby—p. 563

Cause of Torsion of Humerus and of Notch on Anterior Edge of Glenoid Cavity of Scapula. C. P. Martin—p. 573

Nonmetrical Morphologic Characters of Tasmanian Skull. J. Wunderly and F. Wood Jones—p. 583

Measurement of the Chinese Orbit. T. H. Pan—p. 596

Patterns of Aortic Arch in American White and Negro Stocks with Comparative Notes on Certain Other Mammals. C. F. de Garis I. H. Black and E. A. Riemenschneider—p. 599

Lancet, London

2 59 112 (July 8) 1933

Efficient Treatment of Pernicious Anemia. S. C. Dyle and Eileen Harvey—p. 59

Subacute Combined Degeneration and Pernicious Anemia. J. G. Greenfield and Elizabeth O. Flynn—p. 62

Treatment of Anemias. Janet Vaughan—p. 63

*Virus Obtained from Influenza Patients. W. Smith, C. H. Andrewes and P. P. Laidlaw—p. 66

*Harmful Hydrochloride and ON Propylbarniol Lactate in Angina Pectoris. C. Bramwell, M. Campbell and W. Evans—p. 69

Some Problems of Lobar Pneumonia. G. J. Lingley—p. 70

Fatal Case of Agranulocytic Angina Treated with Nucleotide K 96. N. H. Fairley and H. H. Scott—p. 75

Fat Embolism. Two Fatal Cases. G. N. Clark—p. 77

Influenzal Virus—Smith and his associates describe a disease of ferrets produced by the intranasal instillation of filtrates of throat washings obtained from patients with influenza. The disease is transmissible serially in ferrets either by contact or by the intranasal instillation of virus-containing material. So far the infective agent has been recovered only from the nasal passages of ferrets. The disease was produced by five of the eight throat washings obtained from patients with influenza in the early stages of the disease. Throat washings from healthy persons and convalescents from influenza caused no illness. The nasal secretions from a subject with a severe common cold caused no illness. Human serums particularly those from convalescents from influenza, were found to contain antibodies capable of neutralizing the virus of the ferret disease. Swine influenza virus caused a disease in ferrets which was indistinguishable from that produced by virus of human origin and the pig and human viruses have close antigenic relationships. The authors suggest that there is a virus element in epidemic influenza, and they believe that the virus is of great importance in the etiology of the human disease. This view receives considerable indirect support from the fact that Shope found that the pig virus was the essential factor in influenza of swine. The epizootic disease could be produced only by combining two separate agents: (1) a virus and (2) *Haemophilus influenzae* (suus). The virus alone produced a disease so mild that it was difficult to recognize, and the bacillus alone appeared to be harmless. The authors' results with ferrets are consistent with the view that epidemic influenza in man is caused primarily by a virus infection. It is probable that in certain cases this infection facilitates the invasion of the body by visible bacteria giving rise to various complications. Analogous examples of this type of double infection are seen in epizootics of influenza in swine and of distemper in dogs. Decisive evidence on this point can be secured only by intensive study during an epidemic of influenza since direct experiments on man are fraught with difficulties.

Harmine Derivatives in Angina Pectoris—Bramwell and his associates point out that drugs may be used in angina pectoris to cut short the attack or to forestall individual attacks by

giving the drug a few minutes before an attack is expected, or to reduce the frequency and severity of attacks by continuous treatment. The authors shortened the attacks of angina pectoris in two patients by giving them one-half gram (0.032 Gm) of harmol hydrochloride by subcutaneous injection. Similar relief can generally be obtained from the use of glyceryl trinitrate or amyl nitrite, procedures that are simpler and more practicable than subcutaneous injection. The authors compare the potency of the harmol derivatives with that of the nitrites, which are known to be of value in forestalling attacks. They have studied the effect of continuous treatment with harmol hydrochloride by mouth in forty-one cases of angina. In only seven was there any evidence that the patient derived benefit from the drug. Except in a single instance, no toxic symptoms were observed with harmol hydrochloride in doses of 2 grains (0.13 Gm) or less by mouth three times a day, though larger doses were liable to give rise to epigastric discomfort, anorexia, nausea, vomiting, lack of energy, palpitation and occasionally diarrhea. Acute attacks of renal colic occurred in three patients who were taking large doses (from 4 to 5 grains [0.26 to 0.32 Gm] three times a day). The authors also treated twenty patients continuously with O-*n*-propylharmol lactate by mouth. Four patients treated soon after the onset of angina appeared to derive benefit from this drug, but no improvement was observed in the more severe type of angina. The dose did not exceed 1 grain (0.065 Gm) three times a day.

Journal of Oriental Medicine, South Manchuria

18 31-40 (April) 1933

- Effect of Various Living Conditions on Resorption of Fluids in Abdominal Cavity G. Irie—p. 31
Influences of Internal Secretory Glands on Zondek Aschheim's Pregnancy Reaction II Influence of Function of Suprarenal Capsule on Pregnancy Reaction S. Kuga—p. 34
Hyaline Degeneration of Lymph Nodes E. Kitabatake—p. 35
Studies of Toxin of Tubercle Bacilli I Refining Method of Tuberculin and Formotuberculin M. Yato—p. 36
Id II Specificity of Toxin of Tubercle Bacilli M. Yato—p. 37
Effects of Blood Transfusion on Immune Bodies III Blood Transfusion and Bacteriolysin M. Okamoto—p. 38

18 41-52 (May) 1933

- Poison of Hu Man Chiang T. Okanishi—p. 41
Hair Vortex of Chinese S. Takeya—p. 43
Persistence of Hemolytic Streptococcus in Convalescence from Scarlet Fever T. Kitabara—p. 44
Action of Acids and Alkalis on Smooth Muscle Organs K. Saito—p. 46
Pigmentation of Nails in Form of Bands and Lines K. Tasaki—p. 47
Effects of Salvarsan Injections on Blood Picture N. Nishikawa—p. 48
Parasites of Manchurians K. Hiyeda and M. Suzuki—p. 50
Cysticercus Cellulosa Hominis Case T. Terai—p. 52

18 53-60 (June) 1933

- Sulphur and Sulphur Compound in Hydrocyanic Acid Hyperglycemia Influence of Potassium Sulphocyanate on Blood Sugar of Rabbits and Chickens Supplement C. Tsuru—p. 53
Unusual Course of a Case of Meningitis Ending in Cure Y. Matsuura—p. 54
Mechanism of Development of Engorged Liver in Cardiac Decompensation T. Sato—p. 55
Physiologic Significance of Action of Luminal and Veronal on Hyperglycemia Due to Morphine Y. Tachikawa—p. 56
Allergic Reaction Produced by Injection of Sodium Nucleinate Y. Jono—p. 57
Cold Weather Resistance of Contagious Bacilli of Digestive Organs T. H. Lu—p. 58
Urethral Calculi in Perineal and Scrotal Abscess Two Cases K. Matsuda—p. 59

Injection of Sodium Nucleinate—Jono observed that the chief biologic reactions produced by the intravenous or the subcutaneous administration of sodium nucleinate to human beings or animals are (1) marked lowering of blood pressure, accompanied by dyspnea and, in some cases, convulsions, (2) occurrence of initial leukopenia followed by leukocytosis (3) increase in blood coagulation, (4) decrease in the carbon dioxide content of blood plasma, (5) descending velocity of erythrocytes quickened in the case of small doses but delayed when a large dose is administered, (6) reduction of blood viscosity and serum protein content, and (7) marked increase in blood sugar content. When sodium nucleinate is given by mouth, no change takes place in the blood pressure or in the number of leukocytes and their nuclei. The effects produced on the blood pressure and leukocytes when sodium nucleinate is injected

directly into the portal veins are similar to those in intravenous administration, but a much smaller dose is sufficient to bring about the effect, and to a more marked degree. In ascites due to congestion of the portal vein, the existence of nucleic acid was not demonstrable, either directly or indirectly. From these results the author deduces that the biologic reactions produced by the injection of sodium nucleinate may be explained as an allergic reaction and that in the healthy body sodium nucleinate which reaches the intestine does not enter the portal veins but is decomposed to some degree in the intestine or its walls and absorbed.

Presse Médicale, Paris

41 1377-1400 (Sept. 6) 1933

- Essential Role of Specific Antigen in Development of Antitoxic Immunity G. Ramon—p. 1377
*Prognosis of Malignant Lymphogranulomatosis J. Goia—p. 1380
Comparative Study of Antidiphtheritic Serums of Paris and Brussels G. Ruelle—p. 1383
*Interpretation of Negative Cholecystogram P. Buisson—p. 1386

Prognosis of Malignant Lymphogranulomatosis—Of eighty patients with malignant lymphogranulomatosis observed by Goia since 1920, the seventeen patients still living and forty-six of those deceased received roentgen therapy. The average period of survival after the appearance of the first symptoms is five years and four months for the former group, two years and three months for the latter group and three years and one month for the two groups collectively. This compares favorably with the average of seven months for those who received no treatment at all and shows that roentgen therapy is capable of extending the duration of life for a few years. The therapeutic results of roentgen therapy depend primarily on the form of evolution of the disease. In rapid, acute cases, the effect of roentgen therapy is mediocre or absent and occasionally disastrous. In apyretic, slowly evolving cases roentgen therapy may achieve good results depending on the location of the lesion and the stage of the disease. So far as prognosis is concerned the signs indicating a malignant evolution are the involvement of several lymph nodes in rapid succession, the involvement of internal lymph nodes, especially the retroperitoneal and mediastinal lymph nodes, the occurrence of visceral lesions simultaneously or soon after the appearance of adenopathies, multiple gastro-intestinal ulcerations, constant high fever and resistance to roentgen therapy. The disease usually lasts only a few months after the onset of pleurisy, pulmonary lesions on the other hand, are less grave and often respond well to roentgen therapy. An adenopathy that remains localized a long time usually indicates a more benign evolution. A visceral lesion may remain benign a long time if it constitutes the first manifestation of the lymphogranulomatosis, but it assumes a malignant character when the lymph nodes also become involved. Lymphogranulomatosis of the mesenteric lymph nodes has a less grave prognosis than that of the other internal lymph nodes, and lymphogranulomatosis of the mediastinal lymph nodes sometimes responds well to roentgen therapy. Isolated tumors of the gastro-intestinal tract are relatively benign and sometimes well adapted to surgical intervention. A rapid regression of the lymph nodes and the spleen in response to roentgen therapy indicates a benign evolution. Hematologic signs have some prognostic value in association with other signs. Leukocytosis, if constant, and spontaneous constant leukopenia are grave signs, but leukopenia in response to irradiation is a favorable sign. Neutrophilia neutropenia combined with leukocytosis, and monocytosis combined with leukocytosis are signs of a rapid evolution. An eosinophil count of over 15 per cent and a platelet count of from 700,000 to 1,000,000 are found in the grave forms.

Interpretation of Negative Cholecystogram—Buisson states that invisibility of the gallbladder in cholecystography after intravenous injection of the contrast medium is a pathognomonic sign of a pathologic process directly involving the hepatobiliary system. In 650 cholecystographies he obtained negative pictures only in cases in which there was an important lesion of the biliary tract or the gallbladder itself. This contradicts the assertions of other authors that disease processes not directly involving the hepatobiliary system, such as duodenal ulcer or appendicitis can prevent visualization of the gallbladder. Negative cholecystograms were obtained by the author in all cases of (1) chronic sclero-atrophic cholecystitis, (2) chronic

suppurative cholecystitis, dropsy or empyema of the gallbladder, (3) occlusion of the intrahepatic or extrahepatic bile ducts, whether due to calculi lodged in the ducts, neoplastic nodules, parasites from the duodenum or inflammatory processes of the ducts themselves, and (4) stenosis of the ducts or virtual suppression of the gallbladder due to adhesions, scars, adenitis and so on. Negative cholecystograms in patients with disease outside the hepatobiliary tract were obtained by the author only in cases in which intervention also demonstrated one of the forms of hepatobiliary lesion previously mentioned. Positive cholecystograms were obtained in cases of cholecystitis, biliary lithiasis and pericholecystitis not of the aforesaid types, in congenital morphologic anomalies of the gallbladder and in many cases of hepatic disease, even grave and rapidly fatal cases. The negative cholecystograms of other authors can be explained only through the following errors of technique or interpretation: (1) failure to give the iodine compound intravenously or to give a sufficient quantity, (2) failure to fast from six hours before injection to the completion of the cholecystogram, (3) too rapid filling of the gallbladder in patients with cirrhosis, hyperthyroidism or gastro-enterocolic hyperkinesis, (4) retarded filling of the gallbladder in patients with excessive dehydration, (5) weak or transitory filling of the gallbladder due to excessive dehydration or excessive hydration, (6) unusual location of the gallbladder and (7) existence of a lesion of the biliary tract which cannot be diagnosed at surgical intervention.

Polichinico, Rome

40 1481 1520 (Sept. 18) 1933 Practical Section

- Auricular Fibrillation Complicated by Arterial Embolism. Embolectomy. Cure. A. Pozzi and P. Valdoni—p. 1481
Psammoma of Lower Fornix of Conjunctiva. Case. C. Parzani—p. 1492
*Influence of Malarial Infection on Course of Diabetes. Rosa M. Guglielmo—p. 1495
Measuring Superficial Temperature by Means of Dermatherm of Tyco. A. Chiasserini—p. 1497

Influence of Malaria on Course of Diabetes.—Guglielmo observed two patients suffering from diabetes, who years later contracted malaria. One had a history of successfully treated syphilitic infection acquired before the malaria. After six months of malarial treatment with quinine compounds, the two were cured. During this period neither glycosuria nor glycemia was present. Some months after treatment, the glycosuria was about 40 per thousand and the hyperglycemia (on an empty stomach) 145 per thousand. One patient showed no diabetic manifestations for one and a half years, finally becoming diabetic again. The other died soon afterward from bronchopneumonia. The author does not attribute this temporary cure of diabetes to the antisyphilitic treatment in one patient or to the action of the quinine in both. He does not believe that the malarial parasite exerts a beneficial action on the pancreatic or hepatic cells, but he concludes that malaria influences the course of diabetes through the mechanism of its pyrexia.

Archivos Españoles de Pediatría, Madrid

17 337 384 (July) 1933

- *Von Brugsch Reaction in Jaundice of the New Born. J. Carrera Portela—p. 337
Schwenker-Noel Treatment in Grave Forms of Diphtheria. F. Cirajas—p. 351

Von Brugsch Reaction in Jaundice of the New-Born.—Carrera Portela states that von Brugsch claims that his reaction, the positivity of which is indicated by a blue discoloration of the skin following the intradermal injection of a small amount of a 1 per cent solution of potassium ferrocyanide, is of value in making a pathogenic classification of certain types of jaundice. He distinguishes four different shades of icteric pigmentation (reddish yellow, greenish yellow, light yellow and amber yellow) which he correlates respectively with the hepatotoxic, obstructive, hemolytic and chronic forms of jaundice. The fact that the reaction always gives positive results in those types of jaundice which present a pigmentation of a dark orange-reddish hue has led this author to interpret them as an indication of insufficiency of the liver. Dietrich investigated von Brugsch's theory and came to the conclusion that the blue reaction is not related to the cause of the disease but rather to the intensity of the bilirubinemia. The author likewise investigated the prob-

lem and his observations corroborate Dietrich's claims rather than von Brugsch's. He reports the results of the test in fifty-three new-born infants with jaundice of the new-born. The test gives positive results more frequently in younger than in older infants. The positivity of the test diminishes as the infant grows older. Various hues of yellow are shown in the same type of jaundice, whether of physiologic or of syphilitic origin. The orange and reddish hues predominate in cases of jaundice in younger infants and become of a lighter color as the infant grows older. The distribution and intensity of the pigment, the previous presence of icterogenic erythrodermia and the intensity of this erythrodermia do not influence in any way the results of von Brugsch's reaction. Regardless of the type of jaundice, the results of the test are positive when the pigment presents an orange-reddish hue, otherwise they are negative. The factor of primal importance in the results of the test is the color of the pigment. The author performed the reaction twice in two infants who presented a light pale pigmentation the first time the test was made. In the infant in whom the pigmentation was of a pale hue both on the first and on the second time the reaction was performed, the results of the test were negative. In the infant who had a light pigmentation when the test was performed for the first time and in whom the pigmentation changed to a darker hue, the results of the test changed from negative in the first reaction to positive in the second. The author concludes that the reaction will give positive results in all types of jaundice as long as the dark orange-reddish color predominates and that these results do not indicate the cause of jaundice but rather the intensity of the bilirubinemia.

Archiv für Gynäkologie, Berlin

154 1214 (Aug. 21) 1933

- *Acute Suppurative Endomyometritis as Cause of Spontaneous Rupture of Uterus. G. Friedrich—p. 1
Influence of Atmospheric Conditions on Manifestation of Eclampsia. H. Eufinger and J. Weikersheimer—p. 15
Changes of Heart Sounds of Fetus During Entrance of Head into Narrow Pelvis with Especial Consideration of Entrance Effect. K. Dierks—p. 33
Investigations on Heart Action of Fetus. Influence of Head Pressure on Frequency of Fetal Heart Beat. W. Rech—p. 47
Animal Experiments on Relation Between Pregnancy and Thyroid. J. Friedmann—p. 58
*Interruption of Pregnancy During Pulmonary Tuberculosis in Light of Modern Phthisiotherapy. W. R. Glaser—p. 60
Disintegration of Erythrocytes in Blood of Umbilical Cord. H. Schwalm—p. 98
Experimental Studies on Physiology of First Breath. H. H. Klemperer—p. 108
Change of Hepatic Function During Pregnancy. M. Kojima—p. 119
Functional Condition of Liver and Reticulo-Endothelium After Nephropathy. F. G. Dietel and A. Polak—p. 122
Investigations on Porphyrin Content of Human Liquor Amni. R. Fikentscher—p. 129
*Differentiation of Hormonal Substances by Means of Acetonitrile Test. Aschheim-Zondek Test and Estrus Test. Particularly in Fluid from Ovarian Cysts. H. O. Klein and H. Paal—p. 147
Intra-Uterine Diagnosis of Osteogenesis Imperfecta. G. Danielius—p. 161
Function of Insular Apparatus and Fecundity. B. Iiegner—p. 168
Anteflexura Uteri Supplicata. Corresponds Exactly to Pestalozza's Pelvic Hysteropexy. E. Debiassi—p. 194
Genesis of Endometrioid Adenosis in Laparotomy Scars. M. Kranzfeld—p. 196
Paraganglionic Tissues in Ovary. J. Wallart—p. 206

Suppurative Endomyometritis as Cause of Rupture of Uterus.—Friedrich reports the history of a woman, aged 39, who died less than two hours after delivery. The case was at first diagnosed as acute cardiac insufficiency during delivery, but the postmortem examination revealed a spontaneous rupture in the lower part of the uterus and in the upper part of the cervix. The microscopic examination of the uterine wall disclosed an extensive suppurative endomyometritis which probably developed shortly before delivery by an infection from the outside and led to a severe injury of the uterine wall particularly in the region of the isthmus. The author considers the fact that the insertion of the placenta reached partly into the isthmus, a contributing cause of the rupture. Other factors that could have played a part in the pathogenesis of the spontaneous rupture were not present.

Interruption of Pregnancy During Pulmonary Tuberculosis.—After pointing out that opinions about the influence of pregnancy on pulmonary tuberculosis differ widely, Glaser

reports his own observations. Statistical reports show that the course of pulmonary tuberculosis is not more favorable in case of interruption of pregnancy than if it is carried to term. The author's own observations convinced him that pregnancy and delivery have no noticeable influence on the course of the pulmonary tuberculosis. However, in some women an exacerbation of the tuberculous process sets in after delivery. The first six months has been referred to as the "critical half year." During this period, institutional therapy is advisable. The author evaluates the reasons cited in favor of interruption of pregnancy in tuberculous women, and for the majority of cases he does not recognize as valid the medical, the social or the eugenic indications. He demonstrates the necessity of treatment for tuberculous pregnant women; he discusses the course of pregnancy, delivery and puerperium of women in whom collapse therapy has been resorted to and he directs attention to the possibility of reciprocal modification. He gives a tabular report of the results obtained with collapse therapy in tuberculous pregnant women in recent years. From the favorable results of a suitable treatment the demand is deduced to reject interruption of pregnancy in all women in whom the tuberculosis can be treated but in whom treatment has not yet been instituted. Occasional exceptions that justify an abortion are conceded. The author thinks that new pregnancies are undesirable before permanent cure has been obtained but he considers sterilization justified only in exceptional cases.

Differentiation of Hormonal Substances—Kleine and Paal show that the positive acetonitrile reaction (protection against acetonitrile) is not strictly specific for the presence of thyroidal substances, because partial protection could be obtained with tyrosine, with an ovarian preparation, with carbohydrates and with their products of disintegration. However, by means of the so-called transmitted reaction, the acetonitrile test could be made more specific. When normal rabbits were given three injections of dextrose solution, of the ovarian extract or of tyrosine their blood serum gave a negative acetonitrile test twenty-four hours after the last injection. This transmitted reaction improved the diagnostic value of the acetonitrile test. The authors report their studies on a preparation of the posterior hypophysis, on epinephrine, on various ovarian hormones and particularly on fluids from ovarian cysts. They conclude that 1. The preparation of the posterior hypophysis gives a positive acetonitrile test, but hydrolysis in the oxygen stream destroys the protective action against acetonitrile. In contradistinction to the thyrotropic substance of the anterior hypophysis, the preparation of the posterior hypophysis does not produce a histologically demonstrable activation of the thyroid. 2. A positive acetonitrile test can be produced with epinephrine. However, in contradistinction to the posterior hypophyseal extract, to the thyrotropic substance of the anterior hypophysis, to thyroxine and to folliculin, epinephrine shows no protective action against acetonitrile in the transmitted reaction. The histologic test reveals no thyroid activation. 3. Folliculin gives a positive acetonitrile test and this protective action against acetonitrile is not destroyed by hydrolysis in the oxygen stream. The histologic test shows no thyroid activation. 4. Fluids from nonblastomatous follicle cysts produce positive acetonitrile reactions. These positive reactions are probably due to the presence of folliculin, for the positive estrus reaction, in one instance and also the persistence of positivity of the acetonitrile test following hydrolysis in the oxygen stream seem to indicate this. 5. Cystic fluids from benign and malignant cilio epithelial ovarian blastomas produce positive acetonitrile reactions. These positive reactions are probably partly the result of the presence of anterior hypophyseal substances, for in one instance the Aschheim-Zondek reaction I was positive, but they must be due also partly to the presence of folliculin (positive estrus reaction). 6. Cystic fluids from pseudomucin cystomas can produce positive acetonitrile reactions. In these cases they are probably caused by the presence of folliculin since one case gave a positive estrus reaction. 7. Cystic fluids from ovarian dermoids give positive acetonitrile tests, and here again the presence of folliculin seems responsible, since here too the estrus reaction was positive. 8. Cystic fluids from parovarian cysts give positive acetonitrile reactions but in this case the positivity must be the result of substances from the anterior hypophysis, for the estrus reaction was negative.

Biochemische Zeitschrift, Berlin

264 1236 (Aug 17) 1933 Partial Index

- Pure Demonstration of Bacteriophage in Quantities Visible with Nale Eye M Schlesinger—p 6
Metabolism of Tissue Cultures in Anaerobiosis H Laser—p 12
Ferments of Skin Catalase of Human Skin J Wohlgenuth and L Szorenyi—p 94
Relations Between Structure of Antigens and Specificity of Antibodies Significance of Molecular Size of Haptens for Their Affinity to Antibodies L Berger and Frlenmeyer—p 113
*New Method for Quantitative Histidine Determination and Its Applicability in Examination of Biologic Fluids Particularly of Urine from Pregnant Women R Kapeller Adler—p 131

Determination of Histidine in Urine of Pregnant Women—Kapeller-Adler describes a new method for the colorimetric determination of histidine. Histidine, when brought carefully into reaction with a solution of bromacetic acid, and after that with an ammonia ammonium carbonate mixture assumes, when heated, a deep blue-violet color. The sensitivity of this reaction is 1:50,000. Compared to other methods for the determination of histidine, this method has the advantage that it is specific for histidine, for even the closest derivatives of histidine do not give this reaction. Histamine gives a positive reaction, consisting of an extremely weak gold yellow coloration and methyl-histidine gives a slight red-violet coloration. The author has perfected the method for the quantitative determination of histidine in biologic fluids, particularly in urines. Tests were made on urines from normal men and women, from pregnant and puerperal women and from persons with various disorders. It was found that the urines from pregnant women always contained histidine in smaller or larger quantities (from 6 to 74 mg per hundred cubic centimeters, and sometimes as much as 800 mg in the daily quantity of urine).

Dermatologische Wochenschrift, Leipzig

97 1255 1282 (Aug 26) 1933

- Comparative Studies on Sugar Content of Capillaries in Pathologic and Normal Skin A Midana and A Gallia—p 1255
Pityriasis Rosea Haemorrhagica F Kogoj—p 1261
Arsenic Resistant Case of Lichen Ruber Planus Vulvae Cured by Acetarsone H Hirsch—p 1263
Preparations for Washing of Hair J F Kapp—p 1264
*New Rapidly Curative Method of Acute and Chronic Uncomplicated Gonorrhea in Men H Tischler—p 1265

Treatment of Gonorrhea in Men—Tischler employs a bacteriolysin, which acts specifically on gonococci and which does not irritate the most sensitive urethra. In anterior gonorrheal urethritis his method is as follows. After urination, the urethra is irrigated with a permanganate solution of 1:10,000. This irrigation has the object of eliminating the coating of pus. Then a strip of medicated gauze, from 1 to 2 cm in width and slightly longer than the anterior urethra, is saturated with the antigonococcic bacteriolysin and introduced by means of a hollow sound. A little more of the bacteriolysin is added, so that the gauze strip is well saturated. To facilitate the introduction of the gauze, liquid petrolatum is applied both to the end of the gauze strip and to the sound. The author advises that the urethra of sensitive patients be anesthetized with a 5 per cent solution of procaine hydrochloride and, in order to avoid unnecessary irritation, that care be taken that the sound does not advance up to the external sphincter. Dry cotton is applied and fixed by means of adhesive tape to the end of the gauze strip protruding from the urethra. The patient is advised to limit his water intake so as to avoid frequent micturition, in order to retain the gauze strip for a comparatively long time, if the treatment is given in the evening it can be retained until the next morning. The treatment is repeated daily, and patients who have had several attacks of gonorrhea may be treated twice daily. In total gonorrheal urethritis the treatment is similar to that of the anterior form. The introduction of the gauze strip is tolerated even in epididymitis, but the treatment is not advisable in cases of complication with cystitis and acute prostatitis. The advantages of the author's method are that it shortens the time of treatment and that the gauze strip effects drainage of the urethra and prevents the development of a stricture. Moreover the urethra retains its former elasticity and its epithelium does not undergo such changes as are frequently observed following the use of silver solutions.

Deutsche medizinische Wochenschrift, Leipzig

59 1313 1346 (Aug 25) 1933

- Influence of Physical Exercises on Female Organism H Runge—p 1313
Clinicotherapeutic Experiences with Breathing of Negatively Ionized Air J Strasburger and H Lampert—p 1316
*Kehrer's Nerve Pressure or Nerve Stretching Reflexes W Feureisen—p 1319
Roentgen Treatment of Eczema E Hesse—p 1320
Fatality from Alcaligenes Abortus Infection A Sigl—p 1321
Symptom and Training V von Weizsäcker—p 1322
Recognition and Treatment of Acute Anterior Poliomyelitis H Perger—p 1325
*Poliomyelitis in Adults F Nagel—p 1328
*Treatment of Acute Anterior Poliomyelitis by Means of Blood Transfusion from Convalescents I Sherman—p 1332

Nerve Stretching Reflexes—Feureisen aims to determine whether Kehrer's nerve pressure or nerve stretching reflexes indicate an increase in intracranial pressure or a cerebral swelling, or whether they merely indicate a more or less diffuse, latent hyperalgesia. The reflexes are elicitable by pressure on or stretching of nerve trunks, particularly at the sites of exit of the trigeminal and occipital nerves. In a large percentage of patients with brain tumor, Kehrer's reflexes were positive but there were some cases of brain tumor in which these reflexes remained negative. Recently however, the author observed in a patient who had a tumor of the frontal lobe that proved inoperable but could be favorably influenced by roentgen treatment that pressure on the trigeminal points produced an intense pain reflex while the patient was lying down, whereas the reflexes could not be elicited when he was sitting up or standing. This observation differentiates Kehrer's reflexes from Vallier's pressure points observed in neuralgias, neuritides and hyperalgesias. The author admits that only some of the patients with brain tumor showed this change in the reflexes in different positions. In some patients there were no changes, while in others the reflexes were negative in the reclining position and positive in the erect position. In other patients, the reflexes showed the same behavior as in the described case. The first observations seemed to indicate that tumors in the anterior cranial fossa cause an intensification of Kehrer's reflexes when the patient is reclining, while tumors in the posterior cranial fossa cause an intensification when the patient is standing. Later observations did not corroborate this assumption, but the author thinks that the fluctuations in intensity resulting from positional changes do nevertheless increase the diagnostic value of Kehrer's reflexes and for cases in which such fluctuations are observable he accepts Kehrer's maxim: "If a patient presents exclusively or predominantly signs of an organic lesion of the brain and in spite of prolonged rest in bed persists in showing the pain reactions of the trigeminal and occipital nerves, an intracranial pressure increase or a swelling of the brain exists and if there are no signs of meningitis and toxic causes cannot be found a brain tumor exists." Another aid in differentiating Kehrer's signs from mere hyperalgesic pressure points is the strong pain (evasion) reflex that becomes noticeable although the patients assert that the pressure did not cause pain.

Poliomyelitis in Adults—Nagel's observations during the epidemic of poliomyelitis in Leipzig in 1932 showed that about 15 per cent of the patients were adults and that the adults contracting the disease were in greater danger since their mortality rate was much higher than that of children. The author was unable to corroborate the observation that adults show more often an atypical course of poliomyelitis than do children; he found manifold symptomatology but not more so than in children. He gives an outline of the typical course of the disease which he thinks will aid in the diagnosis during the preparalytic stage and he advises that even slight meningeal symptoms should be given careful consideration but he does not think that the examination of the cerebrospinal fluid is of value for the differential diagnosis nor does he consider the number of cells in the cerebrospinal fluid and the first extension of the paralysis a reliable basis for the prognosis. In discussing the treatment the author mentions the various forms of serotherapy, the use of horse serum as well as of convalescent serum and the intramuscular, intravenous and intraspinal administration. He shows how widely opinions differ in regard to the efficacy of serotherapy and he cites one statistical report

demonstrating conclusively that after serotherapy the incidence of paralysis as well as the mortality rate is higher than in cases in which serum is not employed. In view of his own experiences with serotherapy, he thinks that intramuscular or intravenous injections of serum or blood may perhaps be tried, but he advises against intraspinal injection of serum. He thinks that physical therapy is helpful for the improvement of impaired muscles.

Treatment of Acute Anterior Poliomyelitis—Sherman treated fifty-five patients having acute anterior poliomyelitis by means of convalescent serum. The serum was administered intramuscularly or intraspinally, and the quantities varied between 50 and 100 cc. Since the results of this serotherapy were not entirely satisfactory, he decided to employ transfusions of blood from convalescents, reasoning that thus the blood is fresh and unchanged that it can be given in larger quantities than the serum and that it is possible that the protective power of the whole blood is greater than that of the serum. Transfusion of blood from convalescents was resorted to in seventy-one cases. The smallest quantity of blood given was 150 cc while some patients received as much as 400 cc. A comparison of the results of the serum therapy with those of the blood transfusions demonstrated the superiority of the transfusion method. Not only did the transfusion reduce the mortality rate and the frequency of paralysis but its efficacy was demonstrated particularly in the course of the fever and in the general symptoms of the acute infectious disturbance. He suggests that health organizations should keep a record of donors, so that they will be available at any time.

Klinische Wochenschrift, Berlin

12 1393 1432 (Sept 9) 1933

- Classification of Pneumonias in Early Childhood According to Principles of General Pathology on Basis of Clinical and Roentgenologic Aspects A Wiskott—p 1393
Action Coefficient of Thyroxine Effect in Biologic Experiment H Eufinger and J Gottlieb—p 1397
*So Called Glycolysis of Blood and Its Estimation in Clinic W Loewenstein and G Botstiber—p 1402
*Significance of Posterior Lobe of Hypophysis for Pathogenesis of Eclampsia H Ohligsmacher—p 1404
Differentiation Between Pathogenic Organisms of Whooping Cough and Influenza P Manteuffel and Irmgard Dressler—p 1405
*Experimental Investigations on Development of Antrum Gastritis K Overgaard—p 1407
Simple Anomaloscope H Schulz—p 1408
Titration of Sex Hormone in Patients with Mental Disturbances H Saethre—p 1409
Bromine Content of Blood and Sleep Remarks on Reports by H Zondek and A Bier F Holtz and C Roggenbau—p 1410
Idem H Zondek—p 1411
Idem L Pincussen—p 1412
Capillary Function and Age T Hoff and Margarete Kessler—p 1413
Nature of Nonsaponifiable Substances of Pig's Liver G Lohr and E Frankel—p 1413
Treatment of Pleural Empyema A Rutz—p 1414

So-Called Glycolysis of Blood—Loewenstein and Botstiber point out that for serial determinations of the blood sugar the method of Hagedorn-Jensen has been considered the best, because in this method the blood can be kept for several hours in a solution of zinc hydroxide, and thus it is possible to analyze several specimens together. The authors, however, noticed certain irregularities that induced them to determine whether the blood specimens brought in the solution of zinc hydroxide really retain their original sugar content. They were able to show that even in the micromethod of Hagedorn-Jensen there develops "glycolysis" or rather a diminution of the reduction capacity of the blood, unless the blood is completely deproteinized immediately following its withdrawal. The diminution is greatest after about three hours. The reduction is partly reversible, and it is more pronounced in the blood than in the serum. This glycolysis or diminution in the reduction capacity predisposes to errors particularly in the serial determinations during tolerance tests.

Posterior Lobe of Hypophysis and Eclampsia—Ohligsmacher mentions a number of authors who assumed a relationship between the posterior lobe of the hypophysis and eclampsia. He calls attention particularly to Fauvet's studies reported in the *Klinische Wochenschrift* (10 2125 [Nov 14] 1931) and *The Journal* (Jan 23 1932 p 358). In this report Fauvet shows that the anatomopathologic changes typical for eclampsia

can be produced in animals by the injection of the hormones of the posterior hypophysis. Because of the great importance for the problem of eclampsia, the author decided to repeat these experiments. In spite of resorting to varying dosages and periods of injection and although he made the experiments on animals from various litters and on pregnant animals and on males, he never was able to produce the necrotic foci in the liver and the other changes described by Fauvet. He concludes that the theory of the role of the posterior hypophysis in the pathogenesis of eclampsia cannot be considered proved but that, like most other theories on eclampsia, it is still an open question.

Development of Antrum Gastritis—Overgaard reports experiments on dogs. One group was given daily histamine injections while the stomach was empty, so that the gastric juice that was secreted under the influence of the histamine could influence the mucous membrane for some time and in these animals considerable inflammation resulted. That these inflammatory changes were not produced by the histamine injection as such but rather by the gastric juice secreted under histamine action is proved by the fact that dogs fed immediately after the injection did not develop such inflammatory changes. In order to establish still more conclusively that the changes were the result of the action of the strongly acid gastric juice, a number of animals were given a solution of hydrochloric acid by means of a stomach tube. The concentration of the solution corresponded to that of the gastric juice secreted under histamine action. The dogs treated with the solution of hydrochloric acid likewise developed gastritic symptoms. In some of the animals treated with a somewhat different technic, ulcerations developed in the stomach and the duodenum and their histologic structure resembled the ulcers developing spontaneously in human beings. The microscopic studies convinced the author that acute inflammatory changes develop in the gastric mucous membrane if it is exposed for longer periods to the influence of a strongly acid undiluted gastric juice. These gastritic changes resemble greatly those observed in antrum gastritis in human subjects.

Medizinische Klinik, Berlin

29 1163 1196 (Aug 25) 1933

- Roentgenologic Diagnosis in Obstetrics and Gynecology H. Heidler — p 1163
- Biologic Significance of Glutathione H. Walsch — p 1166
- *Acute Benzene Poisoning H. Schneider — p 1168
- *Differential Diagnosis of Appendicitis in Anomaly of Mesentery F. Berner — p 1169
- Aspects of Unusual Form of Stomatitis K. Briest — p 1171
- Iliopectineal Bursitis H. W. Timmermann — p 1172
- Symptomatology of Gastric and Duodenal Ulcers on Basis of Cases Surgically Corroborated C. Cseuz — p 1173
- Treatment of Diabetes Mellitus by Means of Radon H. Wanke — p 1176
- Prophylaxis of Diphtheria by Means of Lowenstein's Protective Ointment in Rural Practice H. Modry — p 1177
- Radical Operation of Inguinal Hernia W. Speck — p 1178
- Conversion of Genes H. Winkler — p 1178
- Uterine Hemorrhages of Hormone Origin Treatment with Ovarian Panhormone and Corpus Luteum Hormone W. Scheidt — p 1181

Acute Benzene Poisoning—Schneider observed a youth, aged 17, who, while lifting a hose filled with benzene, got a gush of it into his mouth and probably swallowed some of it. He immediately felt pains in the chest and became dizzy. The gastric contents, when pumped out two hours later, had no benzene odor. The pains in the chest increased particularly on the right side, and severe palpitation of the heart set in. The following morning the pains were so severe that he could hardly breathe, and he was hospitalized. On the right side, beginning with the fifth rib, there was decreased resonance and the respiration was weakened. Examination of the urine revealed albuminuria increased urobilinogen and cylindruria. The hemogram disclosed a leukocytosis, and the author thinks that this as well as the fever were secondary changes and the result of the pulmonary symptoms. The thoracic pains and the pulmonary symptoms were most likely caused by a hemorrhagic focus near the diaphragm and by an involvement of the bronchus. The hemorrhagic character is assumed on the basis of observations in other cases. It is likely that the fright from the sudden gush caused the aspiration of some of the fluid benzene. The patient recovered within a month. The favorable course and rapid

recovery indicate that the patient absorbed only a small quantity of benzene, and for this reason the suddenness and the severity of the pulmonary symptoms are the more surprising. The author thinks that the fact that the accident happened shortly after the patient had eaten a heavy meal and the tendency of benzene to combine with fats were important factors in this case, for it has been shown in animal experiments that an increased fat content of the blood makes for a greater susceptibility to benzene.

Differential Diagnosis of Appendicitis—Berner calls attention to an anomaly in the intestinal tract that may lead to an incorrect diagnosis of appendicitis and of ulcer of the stomach or duodenum. He describes his observations on a man, aged 33. There was tenderness at McBurney's point but no vomiting or constipation and the hemogram was normal, at any rate there was no leukocytosis. Roentgenoscopy of the intestinal tract disclosed that the appendix was on the left side. Examination of the upper portion of the intestinal tract following a contrast meal revealed that the duodenum took a normal course to the papilla but then turned to the right, backward and upward. The duodenojejunal flexure was absent and the jejunal loops were nearly all in the right side of the abdomen, only the terminal portions of the ileum were in the middle of the abdomen and the cecum was on the left side. The author thinks that the anomalous course of the duodenum and the fact that most of the loops of the small intestine were on the right side demonstrate a malformation of the mesentery, caused by an incomplete torsion of the root of the mesentery during the embryonal period. He calls attention to other reports on this anomaly and emphasizes the dangers to which such patients may be exposed if the anomaly is not recognized. He considers it advisable to inform the patients that they have the anomaly.

Munchener medizinische Wochenschrift, Munich

SO 1275 1310 (Aug 18) 1933

- Sterilization and Castration as Means for Improvement of Race. W. Weygandt — p 1275
- Examination of Patients with Inflammation of Gallbladder A. Krecke — p 1280
- *Pernicious Anemia and Pregnancy A. Eydung — p 1283
- Prophylaxis of Measles F. Hoder — p 1286
- *May Cholesterol Containing Ointments and Cosmetics Produce Health Impairing Actions? C. Moncorps, H. Droller and C. E. Carter — p 1289
- Orthopedics in 1932 M. Lange — p 1292
- Ten Years' Experiences with Adonis Therapy Hahn — p 1296
- Diagnosis of Latent Phlebitis in Lower Extremities O. Meyer — p 1297

Pernicious Anemia and Pregnancy—Eydung relates the histories of two women with pernicious anemia, in whom liver therapy, particularly by injection had produced remissions and who later became pregnant. The pregnancy took a normal course in both women and the infants were healthy. The author calls attention to the fact that, since the introduction of liver therapy, the unfavorable influence of pernicious anemia on pregnancy does not have to be feared as much as formerly. He thinks that interruption of pregnancy is not necessary, if it is possible to produce remission by means of liver therapy, and that suitable treatment and constant hematologic control will protect the mother from grave dangers. Since in the reported cases the infants did not show abnormal blood pictures, the author thinks that the prognosis for the life of the infant has also become more favorable by the maternal liver therapy.

Ointments and Cosmetics Containing Cholesterol—Moncorps and his associates investigated (1) the occurrence of ergosterol or vitamin D in ointments and cosmetics that contain cholesterol, (2) the possibility of percutaneous absorption of vitamin D, and (3) the quantitative ratio between supply and intake in percutaneous administration. In studying the occurrence of ergosterol in ointments containing cholesterol, they studied particularly anhydrous wool fat. The presence of ergosterol was detected and by means of ultraviolet irradiation this ergosterol could be transformed into vitamin D. The possibility of percutaneous absorption of vitamin D was proved in anatomic and therapeutic studies on animals. The anatomic studies revealed that viosterol ointment and to a lesser degree also irradiated wool fat, produce pathologic changes on the vessels and the internal organs that are identical with those following oral poisoning by vitamin D. The therapeutic experi-

ments showed that rats with rickets could be cured by irradiated wool fat. In regard to the quantitative problem, the authors express the opinion that it is not likely that the derivatives of wool fat used for therapeutic or cosmetic purposes, including hair tonics containing cholesterol, have a detrimental effect on the health, especially if a transformation of ergosterol into vitamin D by irradiation is avoided, but that in extreme cases an injurious result is possible. They consider it entirely wrong to recommend a skin cream that contains irradiated ergosterol as a cosmetic and a protection against sunburn, because this substance is a potent therapeutic agent and not a cosmetic the use of which can be recommended to every one.

Wiener klinische Wochenschrift, Vienna

46 1017 1040 (Aug 18) 1933

- Therapeutic Results of Arteriography of Extremities R Demel and M Sgalitzer—p 1017
Asymmetries of Human Body and Their Significance in Orthopedics S Romich—p 1021
*Demonstration of Histogenic Antibodies in Allergic Skin Diseases A Perutz—p 1023
Diaphragmatic Hernia with Interesting Auscultation Phenomenon L Krenn—p 1026
Treatment of Circulatory Disturbances in Pulmonary Tuberculosis F Mattausch—p 1028
Baldness in Nourlings and Its Relation to Baldness in Adults R Lederer—p 1029
Idem R O Stein—p 1029
Syphilis of Aorta Progress in Clinical Procedure Prognosis and Therapy H Schlesinger—p 1030
Disturbances in Appetite of Children and Their Treatment A Bratusch Marrain—p 1032
What Psychoses Occur Most Frequently During Pregnancy and How Are They to be Treated? A Pilcz—p 1033

Histogenic Antibodies in Allergic Skin Diseases—Perutz emphasizes that, in order to classify a skin disease as an allergoderma, three points have to be proved: (1) the specificity of the hypersusceptibility, (2) the possibility of experimental sensitization, and (3) passive transmission of the allergy. He reviews the literature. The opinions of the investigators are divided as regards the passive transmission of allergy. He shows that the cellular localization of the allergy has been demonstrated, that it has been possible to transmit the allergy to a healthy individual by means of the serum of a susceptible individual, and that with the aid of this method it has been possible to identify a number of disturbances as allergic. He considers the problem of passive transmission largely solved, but, to demonstrate the antigen antibody character of the transmission more clearly, he devised a control reaction. The reacting body belongs to the group of thermolabile substances, because, whereas the passive transmission of the normal content of a blister gave a positive result, transmission proved impossible after the content of the blister had been inactivated by heating and keeping it at a temperature of 55 C for half an hour. The author suggests that in passive transmission experiments the active as well as the inactivated content of a blister should be injected, and that then the allergen should be applied. Only the site that has been treated with the active content of a blister, but not the one that has been treated with the inactivated content should react to the allergen application with eczematous manifestations.

Zentralblatt für Gynäkologie, Leipzig

57 2049 2112 (Sept 2) 1933

- Treatment of Juvenile Uterine Hemorrhages T Heynemann—p 2055
*Frequency of Conception Following Conserving Operations and Conservative Treatment of Inflammations of Adnexa H Hübscher—p 2061
Carcinoma of Cervical Stump G Schafer—p 2068
Carcinoma of Stump Following Supravaginal Amputation of Myomatous Uterus Y Ikeda and K Ikeda—p 2074
Perineal Testicular Dystrophy in the New Born W Unger—p 2077
*Testing Placenta for Its Completeness by Air Filling According to Franken W E Richter—p 2078

Treatment of Juvenile Uterine Hemorrhages—Heynemann emphasizes that in cases of extragenital origin, that is, when the uterine hemorrhage is the result of cardiac, vascular, renal, pulmonary, or hemopathic conditions it is necessary to treat the underlying disease. He thinks that further research will probably disclose that functional disturbances of the blood are more often the cause of the severest uterine hemorrhages than was formerly assumed. Although comparatively rare in young girls the possibility of the presence of genital tumors

and polyps should not be overlooked as a cause of hemorrhages. In other cases the hemorrhages are generally of endocrine origin, and for these hormone therapy seems indicated. However, the results heretofore obtained with hormone treatment have not been entirely satisfactory. The author thinks that, although the knowledge about the numerous hormones is not complete, there are certain pointers that should be followed. In menorrhagia he strives to effect improvement by general measures, particularly when the patient is weak and undernourished. If this is not the case and the rectal gynecologic examination reveals no abnormality, uterus-contracting medicaments should be given during the bleeding, and follicular hormones could be administered between the menstrual periods. If there is a noticeable, genital hypoplasia, a preparation of the anterior hypophysis may be tried. Menorrhagia may also occur in young girls in whom the extragenital endocrine glands do not function properly. The glands most frequently involved are the thyroid and the hypophysis. If hypofunction of the thyroid exists, thyroid extract should be given, but if there is hyperfunction, suitable internal or surgical measures should be resorted to. When menstruation is greatly prolonged, glandular hyperplasia may be the cause. In young girls with this complaint, curettage occasionally became necessary, but the author thinks that, in the future, treatment with the new corpus luteum hormones and the B preparations of the anterior hypophysis may replace curettage. The author advises that roentgen and radium therapy be avoided as much as possible, however, if all treatments should fail, he considers a temporary exclusion of the ovarian function by roentgen rays preferable to extirpation of the uterus. He thinks that the prognosis of juvenile uterine hemorrhages is more favorable today than it was formerly.

Conception Following Treatment for Inflammation of Adnexa

—Of a large number of women who had undergone a conserving operation, Hübscher reexamined 102. The surgical treatment was confined to the removal of adhesions or to the extirpation of one tube or of one ovary, which in some instances was combined with salpingostomy. He found that conception had taken place in 137 per cent, and, when those were subtracted who had undergone salpingostomy (which he considers useless), the incidence of conception was 23 per cent. Of the women who had received only conservative treatment, 133 could be reached for an after-examination. Of these, 256 per cent had become pregnant again. From these comparatively low percentages the author concludes that the prospects for a later conception are not favorable after inflammations of the adnexa. To what extent newer methods of treatment will improve the prognosis for later pregnancies the author is unable to determine, but he thinks that in view of the anatomico-pathologic behavior of the tube after an inflammation the prospects are not favorable.

Air Test to Determine Completeness of Placenta

—Richter mentions the methods that have been recommended for testing the completeness of the placenta. He tried Franken's air test on 250 placentas. The placenta, held by the umbilical cord, is put into a wash basin that contains warm water. Then air is introduced slowly through the umbilical vein by means of a syringe of 200 cc capacity. From 150 to 200 cc is sufficient for most placentas, however, if a greater quantity is required, the syringe is refilled and more air is introduced. The author points out that even the inspection under water has advantages over the ordinary inspection, in that, without injury to the tissue the blood coating is removed and the decidua becomes plainly visible as a grayish membrane, and defects in the pink chorion tissue are more easily recognized not only because of the greater contrast but also as a result of the inflation of the placenta. The slightest injury of the chorionic tree opens the placental circulation and air bubbles rise to the surface. The size of the air bubbles should be taken into consideration. If only small bubbles develop the tears are merely superficial and do not necessitate an intervention. In evaluating the results obtained with the air test on the 250 placentas examined he points out that the air test (like the tests that employ other mediums for filling) indicates only an injury of the chorionic tree but not a loss of villous tissue. Consequently, a careful inspection should always be

combined with it. Together the two methods are much more reliable than inspection alone. He thinks that the test should find a wide application in view of its simple technique.

Polska Gazeta Lekarska, Lwow

12 693 712 (Sept. 3) 1933

- Problem of Etiology of Rhinoscleroma. N. Casiorowski—p. 693
Results of Registration of Rhinoscleroma in Poland from July 12, 1930 to June 30, 1932. T. Zaleski—p. 695
Aspects of the Histology of the Rhinoscleroma Especially in Its Terminal Stage. W. Nowicki—p. 696
*Clinical Picture and Therapy of Rhinoscleroma. A. Dobrzanski—p. 700
Mutability of Rhinoscleroma Bacillus. Preliminary Report. H. Meisel and E. Mikulaszel—p. 703

Treatment of Rhinoscleroma.—Dobrzanski states that rhinoscleroma gives a characteristic clinical picture. On the few occasions in which it is difficult to diagnose the decision should be aided by bacteriologic, serologic, respiratory and blood tests together with a biopsy. It is curable in all instances except badly neglected cases presenting profuse cicatrices and growths together with rhinoscleromatous changes in the lower part of the trachea and in the bronchus that bring about the suffocation of the patient. Rhinoscleroma demands a long period of adapted and controlled treatment extending over several years. The length of treatment will have a bearing on its recurrence. The author advocates both the bloody and the bloodless operation such as diathermy and galvanocautery in conjunction with suitable mechanical expanding pressure. Independent of this the entire respiratory tract should be submitted to roentgen irradiation beginning from the nose all the way down to the bronchi. Injections of sodium bismuth or antimony may be given and some authors state that a combination of these solutions gives good results in individual cases.

Sovetskaya Klinika, Moscow

18 285 548 1933 Partial Index

- Lysatotherapy. C. P. Sakharov—p. 296
Clinical and Biochemical Picture of Renal Uremia. V. N. Topolovskiy—p. 313
*Scarlet Fever and Heart Disease. V. I. Molchanov—p. 329
Symptomatology of Cardiac Disease in Rheumatic Infection. L. Ya. Shterman and K. Yu. Turgel—p. 338
Fibrillation and Its Treatment as Based on Electrocardiograms. G. E. Sorokin—p. 404
Electrocardiographic Observations in Acute Infectious Diseases (Rheumatism Typhus). P. E. Lukomskiy—p. 415
Functional Status of Reticulo-Endothelial System in Certain Infections. M. M. Priselkov—p. 429
Glycemia in Abdominal Typhus. I. V. Kasatrin—p. 439
Pulmonary Tuberculosis and Syphilis. I. P. Chekalov—p. 449

Scarlet Fever and Heart Disease.—Molchanov observed seventeen instances of endocarditis following scarlet fever. The age of the patients was between 4 and 12 years. A simultaneous joint involvement was noted in fourteen patients developing endocarditis. The author is of the opinion that this type of endocarditis should be regarded as a rheumatic form as was proved in an autopsy on one of the patients. The simultaneous occurrence of endocarditis and of joint inflammation cannot be regarded as a coincidence. He concludes that scarlet fever may cause endocarditis and does so more frequently than was formerly believed. The author offers the theory that the late appearance of the rheumatic complication in scarlet fever is an allergic reaction on the part of children already predisposed to it.

Norsk Magasin for Lægevidenskapen, Oslo

94 953 1080 (Sept.) 1933

- *Funicular Myelosis and Pernicious Anemia. P. F. Holst—p. 953
*Ovarian Pregnancy. E. Thorgersen—p. 972
General Remarks on Treatment of Mental Disease with Casuistic Contribution. Treatment with Ovarian Extract. Thyroid Tablets and Compound Solution of Iodine. O. Lingjærde—p. 989
*Pneumonia with Empyema and Pyemia Due to Anaerobic Gram Negative Leptothrix. Fatal Case. T. Thjotta—p. 998

Funicular Myelosis and Pernicious Anemia.—Holst says that funicular myelosis occurs most often in pernicious anemia but may also appear in other diseases. The impression seems to be gaining that funicular symptoms in pernicious anemia are almost as frequent as gastric achylia (cf. Naegeli's pernicious triad). The spinal symptoms are often so inconspicuous as to be overlooked unless a systematic careful examination

is made at intervals during the anemia. There is no fixed relation between the symptoms of funicular myelosis and of anemia. Funicular myelosis may be an initial symptom (like achylia) followed sooner or later by anemia. In the first of the two personal cases described there were ataxia, spastic paresis and astereognosis, although the anemia had yielded to liver treatment, and in the second, after marked improvement of the anemia, there was acute onset of spinal symptoms with progression and fatal outcome. In Holst's opinion, graver cases of spinal symptoms have become more common in recent years. The anatomicopathologic changes in funicular myelosis consist of scattered degenerative foci in the white substance of the spinal cord. It is not yet definitely known, he says, to what extent liver therapy affects the myelosis, but the treatment should be instituted as early as possible and large doses should be given over longer periods. He cites the results of necropsy in two cases of pernicious anemia in which funicular myelosis was the immediate cause of death.

Ovarian Pregnancy.—Thorgersen discusses the etiology, pathogenesis and symptoms of ovarian pregnancy. He considers inflammatory changes in the small pelvis with formation of adhesions the main cause, and irregular hemorrhages and abdominal pain the most important clinical symptoms. Clinical diagnosis is impossible and even during operation diagnosis may be difficult. In the first of his two cases with ruptured pregnancy after six weeks, Spiegelberg's criteria were all fulfilled. The second patient had been sterile for eight years, pointing to possible abnormal changes in the ovaries and tubes which might explain the origin of the ovarian pregnancy. In the first half of the pregnancy there were two pronounced attacks of abdominal pain with hemorrhage. Pains set in at term, but they ceased and were followed by hemorrhage; operation was done on the diagnosis of extra uterine pregnancy.

Pneumonia with Pyemia Due to Leptothrix.—In this fatal case, several bone abscesses developed. The illness lasted for five months and led to great emaciation. From pus from the empyema cavity and the bone abscesses and from the sputum *Thjotta* cultivated a gram negative organism consisting of long threads without branching. The organism grew only under anaerobic conditions and particularly in dextrose broth containing sterile pieces of fresh potato; it could not be cultivated on surface mediums and is assumed to produce some substance that hinders the development of surface colonies. The organism split carbohydrates and produced abundant indole and is classified as *aleptothrix*. It is regarded as the undoubted cause of the disturbance; there were no other organisms in the material examined, the *leptothrix* was established in all the material and in pure culture and the patient's blood contained complement binding antibodies against the *leptothrix* strain in dilution down to 1:500. The manner of infection is unknown.

Ugeskrift for Læger, Copenhagen

95 895 914 (Aug. 24) 1933

- Early Diagnosis of Acute Anterior Poliomyelitis. S. Barstrup—p. 895
*Microsedimentation of Blood in Children with Pulmonary Tuberculosis. A. Friedländer—p. 896
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Low Blood Sedimentation in Pulmonary Tuberculosis.—Freudenthal emphasizes that, while the blood sedimentation test is an excellent supplementary procedure among the general methods of examination, normal sedimentation is not a certain inactivity reaction and cannot be recommended as decisive in doubtful cases.

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DISEASE OF THE UPPER RESPIRATORY TRACT

PROBLEMS CONNECTED WITH THE ETIOLOGY
AND PROPHYLAXIS

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Influenza in its pandemic form is a dramatic calamity, happily seen only at long intervals of time. In recent years, however, minor winter outbreaks of epidemic disease of the respiratory tract, characterized by acute onset, prostration, fever and comparatively little involvement of the upper air passages, have more and more tended to be called influenza, although the identity of these disorders with pandemic influenza has been questioned. On the other hand, the common cold is always with us, it is regarded as a trivial disorder, and yet when one considers that it is the antecedent factor in sinusitis, bronchitis, bronchopneumonia and many cases of lobar pneumonia not to mention its more remote relationship to cardiovascular and renal disease, it appears in reality a very serious disorder indeed. It is also worthy of note that some relationship seems to exist between it and influenza at least the interpandemic type for it is a matter of common observation that an increased incidence of the one is usually found in conjunction with an outbreak of the other. It is not surprising, then, that much study has been devoted to this malady.

There is some relationship between the common cold and weather conditions, that weather was long thought to be of primary importance is indicated by the name of the disease itself. There is no question now, however, that the malady is primarily an infectious one and that the effect of weather is secondary. Convincing evidence of this lies in the well known observation that small colonies of individuals if wholly isolated from the outside world are completely free of colds as long as this isolation is maintained no matter to what extremes of cold and exposure they are subject.¹

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1. A recent clear-cut demonstration of this fact is to be found in the paper by J. H. Paul and H. I. Fiese (An Epidemiological and Bacteriological Study of the Common Cold in an Isolated Arctic Community [S. telegram]) *Am. J. Hyg.* 17: 517 (1933). The observations noted an increase in the incidence of disease of the upper respiratory tract until the first few days after the arrival of the first ship in the spring. Then within a week, 5 per cent of the initial cases were "cured." No significant change in the incidence of the upper respiratory tract could be demonstrated after this time.

Assuming then that colds are infectious, one may consider briefly successive steps in the search for the infecting agent.

By use of the plate method of bacteriologic study, it has been possible to isolate a large number of different micro-organisms from the upper respiratory tract, and as one or another of these has happened to be prominent in a given outbreak of colds, etiologic significance was naturally attributed to them. Thus, various streptococci, pneumococci, certain members of the gram-negative coccus group, staphylococci and *Haemophilus influenzae* were at different times thought to be the causative agents of the common cold. Further to complicate the bacteriology of the upper respiratory tract was the announcement in 1922 by Olitsky and his co-workers² of the discovery of a group of minute gram-negative organisms, present in nasal washings, which passed through a Berkefeld filter and grew only in the absence of oxygen. It can readily be seen that the finding of such a multiplicity of bacteria has served to make the problem more and more confused.

The problem of influenza on the other hand seemed at first more simple. In 1892, Pfeiffer³ announced the isolation of the bacillus now known as *Haemophilus influenzae*. During the pandemic of 1889 and for many years thereafter this organism was generally regarded as the cause of the disease. In 1918 however when the world was revisited by influenza, a vigorous controversy sprang up as to the exact role this organism played. Those who believed that *H. influenzae* was the etiologic agent pointed to its almost universal presence in cases of the disease studied in certain localities, whereas the opponents of this view emphasized the failure to isolate it in some regions, its presence in normal individuals, its low pathogenicity for animals, and the wide variety of strains recovered from simultaneous cases of the disease.

A systematic revaluation of the relationship of Pfeiffer's bacillus to influenza has not been possible since that time, owing to the fact that no pandemic has occurred, and studies on the interpandemic form of the disease are open to criticism. On the other hand, valuable data have been accumulated dealing with the bacteriology of colds. In the past ten years several careful studies⁴ of groups of individuals not only

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3. Pfeiffer, R. *Deutsche med. Wchnschr.* 18: 28 (1892).

4. Park, W. H., William, Anna and Krumwiede, C. Studies in Acute Respiratory Infections. *J. Immunol.* 6: 1 (Jan.) 1921. Valentine, F. and Mishulow, I. *ibid.* 6: 301 (Sept.) 1921. Krumwiede, C. and Valentine, F. *ibid.* 6: 343 (Sept.) 1921. Bloomfield, A. L. The Significance of the Bacteria Found in the Throats of Healthy People. *Bull. Johns Hopkins Hosp.* 22: 31 (Feb.) 1921 (April) 1921. Shulley, G. S., Hager, F. M. and Doche, A. R. Studies in the Common Cold. I. Observations of the Normal Bacterial Flora of Nose and Throat with Variations Occurring During Cold. *J. Exper. Med.* 47: 415 (March) 1926.

when suffering from colds but at regular intervals throughout the entire year, have shown that there is a "basal flora" of the upper respiratory tract composed not only of the organisms generally thought to be non-pathogenic but also for longer or shorter periods, of organisms that are known to be highly pathogenic, such as hemolytic streptococcus, pneumococcus, and *H. influenzae*. The presence of such organisms is by no means necessarily associated with symptoms of infection of the upper respiratory tract, they may not increase in number or incidence with the onset of an acute cold, and the only certain relationship that can be established between them and respiratory infection is their activity in the secondary inflammatory processes of the upper respiratory tract. Similar surveys dealing with the presence of the gram-negative filter-passing anaerobes in individuals throughout the year have shown that no causative role can be ascribed them in connection with the common cold. Consideration of these results has now led most investigators to believe that the cause of the common cold lies elsewhere than in the visible bacteria that can be cultivated from the upper respiratory tract.

On the other hand additional light on the mechanism of secondary infection has been thrown by recent investigations in infants.⁵ The upper respiratory tract of the infant is sterile at birth but during the first months of life a basal flora is acquired entirely comparable to that of adults and the first appearance of pathogenic organisms does not necessarily usher in disease. It has been observed that among institutional infants living in wards in which the opportunity for the dissemination of pathogenic agents is good, a very high incidence of respiratory disease occurs roughly between the ages of 8 and 14 months. In the early autumn, when the carrier rate for pathogenic bacteria is very low, an outbreak of colds occurs without any alteration in the basal flora, these colds as a rule are mild and uncomplicated. The agent that produces these colds, however, seems capable of preparing the soil for the dissemination of bacteria since the carrier rate of pathogenic organisms begins to rise. In midwinter this carrier rate may reach a very high level, 80 per cent or more, and then a wave of respiratory disease occurs which is quite different in character from the autumn colds. This change is particularly noticeable in the highly susceptible group already described since in this group nearly every infant affected presents the picture of an acute illness either of the type of influenza or of that of an acute local inflammatory process. In an outbreak of respiratory disease of such a character there would seem to be two types of causative agents acting in cooperation, probably comprising an initiating agent which can give rise to a mild disturbance such as the common cold and in certain instances one or another pathogenic bacteria which are by it empowered to invade the host and give rise to more severe secondary manifestations.

Kiuse⁷ in 1914 was the first to suggest that colds may be due to a filtrable virus and he reported the experimental production of colds with bacteria-free filtrates. Foster⁸ in 1920 repeated these experiments

with similar results. Certain other observers failed in the attempt to confirm them. In the past five years a great deal of additional light has been shed on the importance of a filtrable virus in the etiology of colds. It has been demonstrated⁹ that chimpanzees are susceptible to colds and that these colds closely resemble those observed in human beings, when these animals are inoculated intranasally with bacteria-free filtrates of nasal washings obtained from early human cases of the common cold in about 40 per cent of instances they contract a typical common cold. This observation has been repeated many times and also extended to include human beings. In the case of the ape, in which one must rely wholly on objective changes to establish a diagnosis, the incubation period of the experimental cold is ordinarily forty-eight hours. Human subjects however usually complain of the first symptoms within twelve to twenty-four hours from the time of inoculation. For the next forty-eight hours, as a rule manifestations of infection of the upper respiratory tract increase, improvement then rapidly takes place and symptoms have usually disappeared at the end of five days unless some complication develops. Most of these experimental colds have been mild and they resemble in every detail the disease as found in nature. In every study both on apes and on man a rigid quarantine has been established both before and after inoculation.

On chimpanzees, an observation of great interest was made following inoculation of bacteria-free filtrates from colds there was a springing into prominence of pathogenic bacteria previously inconspicuous in the noses and throats of the animals. In later studies,¹⁰ a shift from the R to the S type of *H. influenzae* was demonstrated during the period of the cold and it was noted that in each instance when an S form appeared during the experimental cold, it was of the same type as the one recovered from that particular animal in previous colds. Only R forms (which have no type specificity) could be cultivated during intervening healthy periods. These results are suggestive experimental evidence that the etiologic agent of the common cold is able to activate pathogenic bacteria already present in the respiratory tract.

Many repetitions of these transmission experiments and many negative controls with material derived from normal individuals, are convincing evidence that there is present in the upper respiratory tract in cases of acute colds a filtrable virus that can give rise to a typical cold when inoculated into human volunteers or anthropoid apes. Further studies of the characteristics of this virus are now available. It survives anaerobically in the cold for at least thirteen days, it is inactivated at comparatively low temperatures by heat, and lastly,¹¹ it has been demonstrated to multiply in tissue culture medium of the type previously employed in the cultivation of vaccine virus. Positive experimental infections have been obtained with tissue cultures of the cold virus as many as fifty generations after the original seeding. These results, later confirmed by

5 Mills K. C., Shibley G. S. and Dochez A. R. Studies in the Common Cold. II. A Study of Certain Gram-Negative Filter-Passing Anaerobes of the Upper Respiratory Tract. *J. Exper. Med.* **47**: 193 (Feb.) 1928.

6 Kneeland Yale Jr. and Dawes C. F. Studies on the Common Cold. V. The Relationship of Pathogenic Bacteria to Upper Respiratory Disease in Infants. *J. Exper. Med.* **55**: 735 (May) 1932.

7 Kruze W. *Munchen med. Wchnschr.* **61**: 1547 1914.

8 Foster G. B. Jr. The Etiology of Common Colds. *J. A. M. A.* **66**: 1180 (April 15) 1916.

9 Dochez A. R., Shibley G. S. and Mills Katherine C. A Study of Acute Infection of the Respiratory Tract in the Ape. *Proc. Soc. Exper. Biol. & Med.* **26**: 562 (April) 1929. Studies in the Common Cold. IV. Experimental Transmission of the Common Cold to Anthropoid Apes and Human Beings by Means of a Filtrable Agent. *J. Exper. Med.* **52**: 701 (Nov.) 1930.

10 Dochez A. R., Mills K. C. and Kneeland Yale Jr. Variation of *H. influenzae* During Acute Respiratory Infection in the Chimpanzee. *Proc. Soc. Exper. Biol. & Med.* **30**: 314 (Dec.) 1932.

11 Dochez A. R., Mills K. C. and Kneeland Yale Jr. Study of the Virus of the Common Cold and Its Cultivation in Tissue Medium. *Proc. Soc. Exper. Biol. & Med.* **28**: 513 (Feb.) 1931.

Powell and Clowes,¹² indicate that the cold virus is similar to other typical filtrable viruses that have been carefully studied.

In regard to influenza, it seems logical to inquire whether or not a filtrable virus may be the cause. One is impressed with the extreme difficulty encountered in reproducing experimentally a picture that resembles influenza, even when presumably susceptible volunteers are brought into direct contact with acute cases of the disease, as was done by Rosenau.¹³ Various reports dealing with inoculation of cultures of *H. influenzae* leave the reader in doubt as to whether the disease produced was typical influenza. A series of experiments performed by Yamanouchi and others¹⁴ seems to point toward the presence of a filtrable virus in individuals suffering from pandemic influenza. They succeeded in producing what they described as the typical disease by inoculation of filtered blood and nasal washings into healthy volunteers. On the other hand, Costa Mandry and his co-workers¹⁵ in a recent sharp outbreak of influenza in Puerto Rico failed to communicate the disease experimentally to human volunteers. This study was made late in the course of the epidemic when changes in the susceptibility of the population to infection may have occurred. In 1931 Long and his associates¹⁶ reported the production in chimpanzees, inoculated with a filtrable agent derived from influenza of a syndrome characterized by prostration, fever and leukopenia. Additional evidence that a filtrable virus is the cause of influenza has recently been brought by Smith, Andrewes and Laidlaw¹⁷ who have produced an acute febrile infection of the respiratory tract of ferrets by intranasal inoculation of filtered nasopharyngeal washings derived from cases of influenza in human beings.

A filtrable agent has recently been cultivated in tissue medium from human cases of influenza in two separate outbreaks of the interpandemic form of the disease.¹⁸ In testing various generations of one of these culture strains on human volunteers, two types of response have been noted. One consisted of typical symptoms of a rather severe common cold; the other, of symptoms of irritation of the upper respiratory tract which were mild in character but, in addition, definite malaise, slight prostration and a little fever, the rise in temperature never exceeding 1 degree F. These experiments indicate that in the interpandemic form of influenza in instances of the disease that are clinically indistinguishable from pandemic influenza there is present a filtrable virus very similar in nature to that of the common cold.

The importance of the relationship of *H. influenzae* to human influenza has not as yet been satisfactorily determined. There has recently been investigation of a disease in animals, swine influenza, in which more than one etiologic agent is necessary in order to produce the

typical natural disease. The studies of Shope¹⁹ have shown that in this disease the active agent of infection is a filtrable virus. This virus, when present alone, produces a very mild disease. However, when there is added either in the natural or in the experimental disease the organism *H. influenzae*-suus this disease assumes a severe and fatal character. Experimental inoculation of pure cultures of *H. influenzae*-suus alone produces little or no manifestation of infection. The investigations thus far briefly reviewed indicate the complex nature of infections of the upper respiratory tract and the possible cooperative rôle played by filtrable viruses and visible bacteria. For many years, efforts have been made to mitigate the severity and cut down the number of these infections by employing vaccine composed of the visible pathogenic organisms of the respiratory tract. In view of the fact that many of these organisms are now believed to be secondary in their activity, the disappointment that has come from the use of such vaccine was to be expected. There are, however, many supporters of this method of prophylaxis, but most agree that the procedure is only partially successful. On the other hand, many large studies carefully conducted with adequate controls have shown no real difference in incidence and severity of colds among the vaccinated as compared with the non-vaccinated groups. These studies²⁰ present strong evidence that at most mixed vaccines confer only the slightest protection against diseases of the upper respiratory tract. Since the initiating agent of the common cold is a filtrable virus, this result is not unexpected.

One might however hope to influence favorably the incidence and course of the secondary bacterial complications of the common cold by employing a vaccine comprised of the organisms concerned. We have made a study designed to throw light on this possibility. A simple antigenic mixture consisting of heat-killed cultures of pneumococci, *H. influenzae* and *Streptococcus hemolyticus*, organisms previously found to be important as secondary invaders, was selected for purposes of vaccination. This vaccine was given at weekly intervals over a long period of time, nine injections in the autumn followed by a similar number in February and March. Infants belonging to the age group highly susceptible to respiratory infection, previously mentioned, were chosen for immunization because in them the incidence of severe respiratory infection is very high. Because of the practical difficulties of the study incident to the careful bacteriologic observations made a small group comprising twenty infants was vaccinated. Unvaccinated infants of the same number and age, and living under exactly similar conditions served as a control group.²¹

A careful analysis of the clinical phenomena observed in the vaccinated group indicates the following outcome. There was no reduction in the number of simple colds or of respiratory infections associated with fever in the vaccinated as compared with the nonvaccinated

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21. This study was made through the courtesy of Dr. Albert I. Hecht at the Home for Helene Infants in New York.

groups. There was, however, an apparent reduction in the severity of infections in the vaccinated infants as judged by the average duration of the febrile period. This was shorter by 40 per cent in the vaccinated as compared with the unvaccinated group. There were five instances of pneumonia among the nonvaccinated and only one among the vaccinated. This study indicates how incomplete the protection is which results from such a vigorous course of vaccination against the organisms presumably concerned. The technic of carrying out such immunization is time consuming and burdensome and, in view of the relatively slight protection obtained, does not seem promising for general use.

Certain other measures have been extensively employed in the attempt to prevent infection of the upper respiratory tract. Among these has been the addition of high concentrations of certain vitamins to the diet. Early investigators, who noted that the chronic respiratory disease of rats on a diet deficient in vitamin A could readily be cured by feeding vitamin A, hoped that the addition of large quantities of this vitamin to the diet might enhance human resistance to respiratory disease. Consequently, large amounts of this and other vitamins have been fed to groups of individuals and the effect on the incidence and character of respiratory infection has been observed. The careful studies of Barenberg and others²² are convincing evidence that children given large doses of vitamins A and D fare no better in regard to the occurrence of respiratory disease than do those on an ordinary diet.

In addition to its antirachitic properties, ultraviolet radiation has been proposed as an aid to general health, and this agent has also been tried as a prophylactic measure against colds in adults. The well controlled studies on this subject in the Johns Hopkins group, however, seem to indicate that regular exposure to ultraviolet rays does not diminish the incidence of colds in the light-treated group. These investigators²³ have also analyzed the importance of abnormalities of the upper air passages, hygienic sleeping conditions, clothing, exercise, habits and the like in susceptibility or resistance to respiratory infection. They have not found that any of these factors play an important role in determining the incidence of infections of the upper respiratory tract.

A consideration of the results obtained up to the present from efforts to prevent or control infection of the upper respiratory tract leads one to ask whether any clues exist that may be followed with any hope of success in solving the problem of colds and influenza. The most promising method of attack would seem to derive from the newer conceptions of these diseases, which have been developed in recent years. The knowledge that they are primarily infectious due to agents belonging to the group of filtrable viruses and that in some instances the etiology may be complicated by the presence of one or more of the well known pathogenic bacteria should so clarify the understanding of them that henceforward more rational methods of control may be undertaken.

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²² Barenberg L. H. and Lewis J. M. Relationship of Vitamin A to Respiratory Infections in Infants. *J. A. M. A.* 98: 199 (Jan. 16) 1932. Barenberg L. H., Friedman Irving and Green David. The Effect of Ultraviolet Radiation on the Health of a Group of Infants. *J. A. M. A.* 87: 1114 (Oct. 2) 1926.
²³ Doull J. A., Van Volkenburgh V. A., Herman N. B. and Gafar W. M. Relationship of Abnormalities of the Upper Respiratory Tract to Minor Respiratory Diseases. *Am. J. Hyg.* 17: 743 (May) 1933. Gafar W. M. Hardening Procedures and Upper Respiratory Disease (Common Colds). *Am. J. Hyg.* 16: 233 (July) 1932.

THE TREATMENT OF SCARLET FEVER WITH ANTITOXIN

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The most important factors in the management of scarlet fever are the early diagnosis of the disease and the administration of an adequate amount of scarlet fever antitoxin. If this is done, a favorable effect will be noted on the severity of the febrile stage of the disease, on the course and duration of the fever, on the intensity and duration of the skin lesions, and on the occurrence of complications. These statements are supported by numerous reports that have appeared in the literature during the last few years, and by a study of 2,303 cases of scarlet fever admitted to the Durand Hospital during the years 1924 to 1931 inclusive, in 882 of which scarlet fever antitoxin was administered. This study deals with the last group. The antitoxin used was commercial concentrated and refined serum, standardized by means of skin tests in susceptible persons. One therapeutic dose (sufficient antitoxin to neutralize 300,000 skin test doses of toxin) was given intramuscularly in most cases, although in some of the severe cases two, three, four or more therapeutic doses were given. The dosage and accurate standardization of the antitoxin are important factors in evaluation of the effect of the antitoxin, and the results obtained by various workers can be compared only when this has been recorded and taken into consideration.

It is realized that scarlet fever is a disease subject to wide variation in severity from year to year, and even within the same season, and with this fact in mind the results were tabulated for each year, but the comparative results obtained in the cases in which antitoxin was administered and in those in which antitoxin was not administered did not vary to any extent throughout the entire period. Furthermore, to make the study of the two series as comparable as circumstances would permit, the cases were divided into mild, moderately severe and severe, according to the symptoms. The mild cases are those presenting little fever, and mild and transient eruptions, moderately severe cases are those in which the temperature was in practically all instances 102 F. by mouth and in which there was a moderate degree of toxemia, the cases described as severe were characterized by high fever, extensive eruption, stupor, delirium or severe septic complications. Of the 882 cases in which antitoxin was administered, 275 were classified as mild, 487 as moderately severe and 120 as severe cases, while in the group in which antitoxin was not administered 573 were mild cases, 743 were moderately severe and 105 were severe cases. The general treatment aside from the use of antitoxin was the same in the two series. At first antitoxin was given only to the sickest patients; later it was given all acutely sick patients. It is thought that the cases in which antitoxin was not administered during the period of eight years furnish quite an accurate control to the ones in which antitoxin was administered. Any disparity should operate against the results in the antitoxin group.

In attempting to evaluate the results obtained from the use of the antitoxin attention has been concentrated

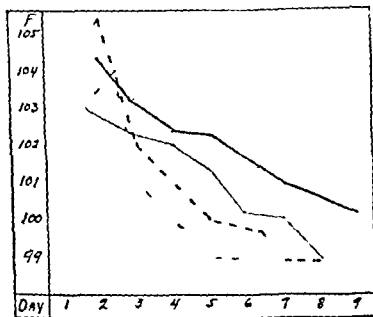
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principally on its value in the prevention of complications and to a lesser extent on its effect on the general clinical course of the disease. The favorable effect of the antitoxin on the clinical course of the disease has been observed by practically all workers who have used the antitoxin extensively.

EFFECT OF SCARLET FEVER ANTITOXIN ON THE CLINICAL COURSE OF THE DISEASE

In early cases the rash is the most convenient indicator of the action of the antitoxin. If enough antitoxin has been given, the typical punctate rash fades within twelve to twenty-four hours and may be absent with only a subcuticular flush persisting. If the rash has been present for three or four days, the effect of the antitoxin on the rash is not so striking but it has a tendency to run a course somewhat similar to the rash in cases in which antitoxin has not been administered. Corroborative evidence that the skin lesions are milder is shown by the fact that the degree of desquamation is markedly less in patients receiving antitoxin, being usually slight and lasting sometimes for only a few days. With the disappearance of the rash there is a marked improvement in the general condition of the patient, especially noticeable in toxic cases. Another

effect of the antitoxin is the unmasking of such complications as are already present. The removal of the toxic element of the disease makes the recognition and proper treatment of early complications more certain. The manner in which scarlet fever antitoxin influences the fever during the acute stage of the disease is an important index of the general effect on



Composite temperature charts of uncomplicated cases: solid light line twenty moderately severe cases treated without antitoxin; broken light line twenty moderately severe cases treated with antitoxin; solid heavy line twenty severe cases treated without antitoxin; broken heavy line twenty severe cases treated with antitoxin.

the clinical course. This effect is shown in the accompanying chart. Often there is a slight rise in temperature after the injection of serum followed within a few hours with a marked decline in practically all cases in which sufficient antitoxin has been administered early in the disease. Frequently there is a decline from 104 or 105 F within twenty-four hours. However, if the antitoxin has been given relatively late in the disease the fever is practically always favorably modified but usually not to the same extent as in those cases in which antitoxin is administered earlier.

COMPLICATIONS

Aside from the toxic and septic cases the febrile period of scarlet fever is not attended with particular danger. Most deaths result from complications which likewise constitute the major medical problems. Complications develop in a fairly high percentage and therefore are more to be feared than the chances of death.

The frequency of the more important complications in the series in which antitoxin was administered and in the series in which antitoxin was not administered is presented in tables 1, 2, 3 and 4. From a study of these results three striking facts are disclosed: 1. A

large number of serious complications occurred in the mild cases in which antitoxin was not administered. 2. A large number of severe cases were free from complications in the series in which antitoxin was administered, in contrast to the large number of severe cases that showed complications in the series in which

TABLE 1—Complications in 848 Mild Cases of Scarlet Fever, With and Without Antitoxin

Complications	Percentage of Complications in 270 Cases According to Day of Attack on Which Antitoxin Was Given					Total Per- centage	Percentage of Com- plications in 771 Cases Without Antitoxin
	First Day 70 Cases	Second Day 70 Cases	Third Day 66 Cases	Fourth Day 36 Cases	Later Than Fourth Day 24 Cases		
Suppurative otitis media	1.2	0	3	0	0	1.09	3.14
Operative mastoiditis	0	0	0	0	0	0	0.34
Non-suppurative otitis media	1.2	0	1.2	0	1.2	1.09	1.20
Hemorrhagic nephritis	0	0	0	0	0	0	1.20
Mild nephritis	0	0	0	0	0	0	1.04
Severe cervical adenitis	0	1.4	0	0	0	0.36	0.2
Cervical abscess	0	0	0	0	0	0	0.34
Peritonsillar abscess	0	0	0	0	4	0.36	0.69
Multiple arthritis	0	0	0	0	0	0	0.67
Bronchopneumonia	0	0	0	0	0	0	0.17
Suppurative sinusitis	0	1.4	0	0	0	0.36	0.67
Deaths	0	0	0	0	0	0	0.17
Total percentage	2.5	2.7	4.5	0	8.3	3.27	10.47

antitoxin was not administered. 3. A small number of complications occurred when the antitoxin was given during the first two or three days of the disease.

It has been said that mild scarlet fever was of little value in evaluating the effect of antitoxin, but this is not the case, since practically every physician who has treated many cases of scarlet fever has frequently observed the serious complications that may develop from mild cases. In this series, in the group of mild cases in which antitoxin was not administered there were eighteen cases of suppurative otitis media, in two of which mastoiditis developed and operation was performed, seven cases of acute hemorrhagic nephritis, cervical abscesses developed in two and there was one

TABLE 2—Complications in 1230 Moderately Severe Cases of Scarlet Fever With and Without Antitoxin

Complications	Percentage of Complications in 457 Cases According to Day of Attack on Which Antitoxin Was Given						Percentage of Com- plications in 741 Cases Without Antitoxin
	First Day, 90 Cases	Second Day 141 Cases	Third Day 173 Cases	Fourth Day 64 Cases	Later Than Fourth Day 29 Cases	Total Per- centage	
Suppurative otitis media	2.2	1.5	2.4	1.0	3.1	2.0	3.5
Operative mastoiditis	0	0	0	0	0	0	1.6
Non-suppurative otitis media	0	0	3.2	4.2	7.6	2.4	1.6
Hemorrhagic nephritis	0	0	0	0	1.1	0.41	1.1
Mild nephritis	0	0	0	6.4	4.0	1.4	2.4
Severe cervical adenitis	0	0	0	0	3.1	0.41	0
Cervical abscess	0	0.5	1.0	0	0	0.61	1.7
Peritonsillar abscess	0	0	0	1.4	1.4	0.41	1.0
Multiple arthritis	1.1	2.0	0	4.2	0	0	1.2
Bronchopneumonia	0	0	0	0	1.4	0.2	0.6
Suppurative sinusitis	2.2	0	0	4.2	4.0	1.6	2.7
Deaths	0	0	0	0	0	0	0.13
Total percentage	4.1	10.0	22.0	7.1	11.5	4.41	

case of bronchopneumonia and one of streptococcal meningitis. Of the 120 severe cases in which antitoxin was administered 51 were without complications, while in 105 severe cases in which antitoxin was not administered only 5 were without complications. Most of the serious complications in the group in which antitoxin was administered occurred in those in which antitoxin was given on the fourth day of the disease.

or later. In some of these cases the complication had already occurred or was in the incipient stage when the antitoxin was given. No pronounced effect was observed on the course of complications that had appeared before antitoxin was given. Definite differences appear in the frequency of complications in the two series.

TABLE 3—Complications in 225 Severe Cases of Scarlet Fever, With and Without Antitoxin

Complications	Percentage of Complications in 120 Cases According to Day of Attack on Which Antitoxin Was Given						Percentage of Complications in 10 Cases Without Antitoxin
	First Day 12 Cases	Second Day 30 Cases	Third Day 24 Cases	Fourth Day 16 Cases	Later Than Fourth Day 35 Cases	Total Percentage	
Suppurative otitis media	26.6	13.3	12.4	21	20	19.1	24.2
Operative mastoiditis	0	3	8.3	12	8	6.6	19
Non-suppurative otitis media	0	0	8.3	0	28	20	10
Hemorrhagic nephritis	0	0	4.1	0	8.8	11.7	11
Mild nephritis	0	0	4.1	0	8.8	12.5	25
Severe cervical adenitis	0	0	0	6.2	6.2	2.5	8
Cervical abscess	0	0	8.3	6.2	8.8	10.5	8
Peritonsillar abscess	0	0	8.3	0	6.2	10.5	5
Multiple arthritis	0	3	0	12	0	2.7	4.7
Bronchopneumonia	0	3	0	2	6.2	13	9
Suppurative sinusitis	0	0	8.3	12	11.4	6.6	7
Deaths	0	6.6	0	12	28.5	11.6	21.9
Total percentage	26.6	26.6	62.5	87	87	91	92

Suppurative otitis media occurred in 18 mild cases, in 112 moderately severe cases and in 35 severe cases in the series in which antitoxin was not administered, while there were 3 cases of suppurative otitis media in the mild cases, 10 in the moderately severe cases and 23 in the severe cases in which antitoxin was administered. In 12 of the 23 severe cases in which the complication developed, the antitoxin was given on the fifth day after the onset of the disease or later. Of the total number in which antitoxin was not adminis-

TABLE 4—Complications in 2,303 Cases of Scarlet Fever of All Types With and Without Antitoxin

Complications	Percentage of Complications in 882 Cases According to Day of Attack on Which Antitoxin Was Given						Percentage of Complications in 142 Cases Without Antitoxin
	First Day 184 Cases	Second Day 240 Cases	Third Day 213 Cases	Fourth Day 118 Cases	Later Than Fourth Day 122 Cases	Total Percentage	
Suppurative otitis media	3.7	2.4	3.7	5	7.3	4.19	11.6
Operative mastoiditis	0	0.47	0.93	1.6	2.4	0.97	2.3
Non-suppurative otitis media	0.54	0	3.2	2.5	5.8	2.04	5.3
Hemorrhagic nephritis	0	0	0.46	0	4	0.68	2.1
Mild nephritis	0	0	0.46	3.2	4	1.2	1.8
Severe cervical adenitis	0	0.47	0	0.84	3.2	0.68	1.3
Cervical abscess	0	0.81	1.6	0.84	3.2	1.1	1.3
Peritonsillar abscess	0	0	0.93	0.84	3.2	0.79	1.3
Multiple arthritis	0.54	1.6	1.6	4.2	0	1.5	3.1
Bronchopneumonia	0	0.47	0	0.84	2.4	0.6	1.1
Suppurative sinusitis	1.8	0.47	0.93	4.2	5.8	1.9	2.3
Deaths	0	0.81	0	1.6	8.1	1.5	1.6
Total percentage	5.9	6.6	14.5	24.4	41.7	10.64	30.2

tered mastoiditis developed in 34 and operation was performed, while there were 8 such cases in the series in which antitoxin was administered. In 5 of the latter, antitoxin was given on the fourth day of the disease or later.

Acute hemorrhagic nephritis occurred in 7 mild cases, in 10 moderately severe cases and in 13 severe cases in the series in which antitoxin was not administered while this complication developed in none of the mild cases, 2 moderately severe cases and 4 severe cases in

the series in which antitoxin was administered. There were also fewer cases of mild nephritis, cases that showed albumin and casts for several days, in the series in which antitoxin was administered. Cases of transient albuminuria that appeared at the height of the febrile period are not included in this group.

Multiple arthritis occurred principally in the moderately severe and in the severe cases. There was a marked variation in the tendency to arthritis at different times during the various years. It was most frequent in the second and third decades of life and was especially apt to occur in those patients who had had rheumatism previously. The frequency of this complication is less in the series that received antitoxin but in some instances the condition may have been diagnosed as part of a serum reaction when in reality it was true scarlatinal arthritis.

A mild to moderate degree of cervical lymphadenitis is present in practically every case of scarlet fever and is considered a part of the disease. Severe cervical adenitis appeared in 1 mild case, in 2 moderately severe cases and in 3 severe cases in which antitoxin was administered while there were 3 in the mild cases, 7 in the moderately severe and 9 in the severe cases in which antitoxin was not administered. Among this group, cervical abscesses developed in 10 cases in which antitoxin was administered and in 19 cases in which antitoxin was not administered.

Purulent sinusitis was less frequent in the series in which antitoxin was administered except in the severe cases in which there was a slight increase. Sinusitis is commonly present at the onset of the disease and before the development of the rash, so that one would not expect its incidence to be influenced by antitoxin. Six cases of orbital cellulitis secondary to an ethmoiditis occurred in the series in which antitoxin was not administered and in 2 cases in which antitoxin was administered.

Eight cases of myocarditis, four of endocarditis and one of pericarditis were recognized in the series in which antitoxin was not administered while four cases of myocarditis and two of endocarditis were recognized in the series in which antitoxin was administered. In two of the latter antitoxin was given on the fourth day or later of the disease. Two cases of myocarditis and one of endocarditis in the series in which antitoxin was not administered resulted in death, while two cases of myocarditis in the serum-treated group proved fatal.

Pleurisy with effusion occurred in five cases in which antitoxin was not administered and in two cases in which antitoxin was administered, one on the eighth day of the disease and one on the second day of the disease.

Acute appendicitis occurred in two cases in which antitoxin was not administered. One of these patients was operated on.

Osteomyelitis of the femur occurred in one case in which antitoxin was given on the third day.

There were five cases of recurrent scarlet fever in the series. In two of these antitoxin was given on the second day of the disease, and in the others, antitoxin was not administered.

There was one death (of streptococcal meningitis) in the mild cases, one in the moderately severe and twenty-three in the severe cases in which antitoxin was not administered while there were no deaths in the mild and moderately severe cases and fourteen deaths in the severe cases in which antitoxin was administered. In two of the fatal cases in the antitoxin-treated series

antitoxin was given on the fourth day, and in ten on the fifth day or later of the disease. Four of these patients died within eighteen hours after admission. In the series in which antitoxin was administered, only two deaths occurred in patients that had received antitoxin before the third day. One of these died of streptococcal meningitis twelve hours after admission.

In a recent study of serum reactions in 876 cases of scarlet fever, the cases recorded in this series in which scarlet fever antitoxin had been administered, it was found that reactions occurred in 22.7 per cent, or in 20.8 per cent if cases presenting a history of previous administration of serum were excluded. The same study showed serum reactions in 28.1 per cent of 2,859 patients who had received diphtheria antitoxin. It was also stated that the frequency of these reactions depended on the susceptibility of the individual, the previous administration of serum, the toxicity of the serum, the age of the serum and to the greatest extent on the amount of serum injected. One of the most important factors in determining the frequency of serum reactions in scarlet fever is the previous administration of serum, as many of these patients have been immunized with toxin and antitoxin or have had

obtained when the antitoxin is given early in the course of the disease and in sufficient dosage.

5 Serious complications often develop from mild cases of scarlet fever treated without antitoxin.

6 Serum reactions occurred in 22.7 per cent of the patients of the series or in 20.8 per cent if those with a history of previous administration of serum are excluded. They were not more severe and were less frequent than after the use of diphtheria antitoxin.

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AN ANTISERUM FOR THE TREATMENT OF TULAREMIA

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The antiserum used in these clinical trials was made by inoculating goats subcutaneously with formaldehyde-killed suspensions of *Pasteurella tularensis*. One batch of serum represented mainly avirulent strains. For all others virulent strains were used. None of the serum was concentrated or refined. It was cleared by centrifugation or filtration and different samples were treated or used in different ways. Some were preserved with phenol, some were preserved with merthiolate, and some were used without a preservative. Some were used when fresh and others were stored for from three months to one year before using. Dosage has been varied both in amount and in number of injections to determine if possible the general requirements for cases of average severity. Serum has been administered subcutaneously, intramuscularly, and, most frequently, intravenously.

The diagnosis has been confirmed in each case by agglutination or intradermal tests, frequently by both procedures. The third year's experience with the intradermal reaction provoked by injection of the standardized detoxified suspension confirms the results of previous studies.¹ The response is absolutely specific and certain if the test is made properly. The reaction will betray the presence of tularemic infection from the second day to the fifteenth month of disease. It is especially useful during the first twelve days, when agglutination tests are usually negative. Positive reactions were obtained with negative agglutination tests in seven early cases in this series.

Sixty-nine patients received the serum. Thirty-one were treated and studied by me and the remainder were treated at other hospitals or by their personal physicians. No patient was treated during the first six days of illness. Five were treated on the seventh day and eight more before the end of the tenth day. The majority were treated during the first five weeks of illness, the average time of receiving serum being the twenty-first day of disease. Four deaths occurred. In one case the disease was complicated by diffuse arteriolar sclerosis of long standing with nephritic and cardiac failure. In the other three there were extensive tularemic infiltrations of the thoracic and abdominal viscera before serum was given.

Following adequate serum therapy there is a rapid fall in temperature, a marked diminution in the sizes

TABLE 5—Frequency of Serum Reactions in Scarlet Fever Patients Receiving Different Quantities of Scarlet Fever Antitoxin

Amount of Serum per Dose	Cases Showing Reaction			Total Cases	Percentage of Cases Showing Reaction	Percentage of Cases Showing Reaction Excluding Those with History of Previous Administration of Serum
	No History of Previous Administration of Serum	History of Previous Administration of Serum	Cases Observed Ten Days or More Without Reaction			
10-18	1	168	27	635	22.3	20.8
20-30	2	7		24	20.8	
30-54	3			5	0	
50-72	4			4	0	
70-99	5	1		5	20.0	
		176	22	618	22.7	

diphtheria or tetanus antitoxin. With the general use of toxoid for immunization against diphtheria and new methods of concentrating and refining the serum it is to be expected that the frequency of serum reactions after the use of any antitoxin will be less than at present. In this series the reactions were not more severe than after the use of diphtheria antitoxin. The frequency of serum reactions in this series is recorded in table 5.

CONCLUSIONS

Results in 2,303 cases of scarlet fever of different degrees of severity, in 882 of which scarlet fever antitoxin was administered indicate that:

1 Scarlet fever antitoxin exerts a favorable influence on the clinical course of the disease. This is evidenced by a lessened severity of the febrile stage of the disease, on the course and duration of the fever and on the extent and duration of the skin lesions.

2 Complications are less frequent in patients treated with an adequate dosage of scarlet fever antitoxin.

3 Almost all the complications that occurred in the series in which antitoxin was administered appeared in patients who received the antitoxin relatively late in the disease.

4 As in diphtheria the best results in the treatment of scarlet fever with antitoxin on the clinical course of the disease and the prevention of complications are

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Read before the Section on Pharmacology and Therapeutics at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1935.

1. Foshay, Lee. Tularemia: Accurate and Earlier Diagnosis by Means of the Intradermal Reaction. *J. Infect. Dis.* 51: 266-71 (Sept-Oct) 1935.

of the enlarged lymph nodes and disappearance of pain at the sites of glandular enlargements. If a painful primary lesion is present, the pain soon disappears and an acceleration in the healing process is noted. Erythematous lesions usually disappear within a week. Relief from severe headache is often the first noted favorable change occurring usually the day after the first serum injection. Arthralgias, myalgias and general malaise are usually greatly lessened during the first three days and may disappear entirely, but sometimes they recur intermittently for brief periods until complete convalescence is established.

Coincident with these changes there is a fall in the leukocyte count and a complete disappearance or very marked diminution in the reaction to subsequent intradermal tests. This desensitizing action of the serum is very striking and seems to be closely associated with its curative action. A completely negative skin test three or four days after administration of the serum almost always indicates a prompt and uneventful convalescence, whereas positive reactions at this time have almost invariably preceded a recurrent glandular enlargement later in convalescence or a prolonged return of myalgias and malaise occasionally with recurrent brief periods of low grade fever. Hence the skin test may be used as a fairly reliable index of the adequacy of serum treatment and as a prognostic aid in estimating the length of convalescence and the likelihood of occurrence of sequelae.

Without taking sides in the controversy concerning the harmful versus the beneficial role played by the allergic or hypersensitive state in infections, I would like to emphasize that the rate of recovery and the degree of completeness of recovery from tularemia induced by specific therapy vary directly as the rate

the majority have fallen to about 1:40, and often with a previously absent prozone inhibition in dilution 1:10. One patient became infected during the third month of pregnancy. She responded favorably to serum treatment and was well two months after the onset of infection. She came to term without difficulties and delivered a normal baby. Agglutination tests were made with serum from both maternal and fetal bloods. Each was positive in all dilutions through 1:160, showing that these agglutinins can pass the placenta.

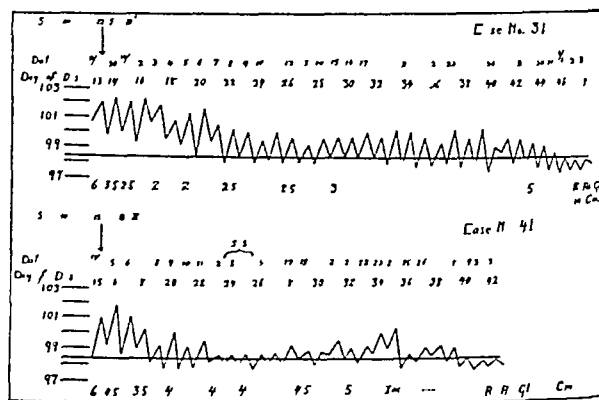


Chart 2—Effect of inadequate treatment in two patients given single small doses of potent serums

A very important therapeutic result is the great shortening of the period of disability. Five men were able to return to arduous rabbit hunting within ten days from the injection of serum. Eleven patients treated in the laboratory were maintained as ambulatory cases. Seven of these did not have to abandon their customary work for as much as one week and the remainder were able to resume their usual work before the end of the second week. This is in great contrast to the general experience with untreated cases, although there is not sufficient reliable information on this point to make an accurate comparison.

One patient who had received one small injection of goat serum showed the usual temporary improvement in regard to temperature and sizes of involved lymph glands. On the twenty-third day after the injection of serum he was having malaise as severely as before and had four lymph glands each at least 1 cm. in diameter in one axilla. Extreme sensitivity to goat serum made it unwise to try it again. With the hope of shortening the disease and preventing glandular suppuration, he was given by vein 18 cc. of my own serum. At the time of injection he had an indurated, painful, 9 by 7 cm. inflammatory reaction from a positive skin test on his forearm. Thirty hours after the injection of my serum he was free from malaise, his lymph glands were impalpable and the reaction to the skin test had been entirely effaced. This seems to me to be strong evidence in support of my belief that vaccination of laboratory workers as I have practiced it, is an efficient prophylactic measure.²

The goat antiserum is not bacteriostatic or bactericidal. On the contrary, its effect on living bacteria, as judged by animal inoculations, seems to be an exaltation of virulence. Nor is it protective for mice, rats, guinea-pigs or rabbits, even in amounts very large in relation to the weights of these animals as compared with effective human doses. Its beneficial action in man seems to be due to the reduction of inflammatory

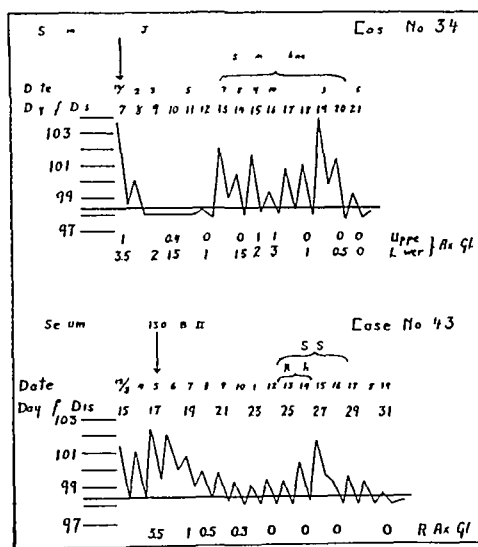


Chart 1—Effect of antiserum on temperature and enlarged axillary glands in two patients adequately treated with a single intravenous injection

and degree of reduction of the specific hypersensitivity. This has been observed in patients treated by vaccines as well as in those treated by antiserum.

In one patient with the typhoidal type of disease the serum caused a rapid rise in the phagocytic index from 18 per cent to 100 per cent, although it did not prevent his death. The effects of serum therapy on agglutinin titers have been very irregular. Some titers have been greatly increased a few have disappeared entirely and

edema and stimulation of phagocytosis, both of which seem to be dependent in some way on its desensitizing property

Chart 1 shows the effect of the antiserum on the temperature and the enlarged lymph glands in two patients who were adequately treated by a single intravenous injection. Experience has shown that single doses of from 10 to 15 cc are not sufficient for the case of average severity. Out of thirty-five such patients treated with one injection, only twelve made rapid recoveries. In case 34, the irregular temperature that follows four successive afebrile days is due to serum sickness, the longest and most severe that has occurred. The serum used in this case was made almost entirely from avirulent strains. Out of ten patients treated with this batch of serum, only two made good recoveries. These two received 18 and 23 cc of it, respectively. In doses from 10 to 15 cc its potency seemed to be low. Case 43 shows a fairly good therapeutic response to a small single dose of serum made from virulent strains only.

Chart 2 shows the effect of inadequate therapy in two patients treated by single small doses of potent serums. The delayed fall in temperature and the secondary enlargement of glands after an initial reduction are characteristic. Glandular suppuration occurred in each case, on January 14 in case 31. It seems probable now that at least half of the patients received too little serum. The very mild short period of serum sickness in case 41 is representative of 90 per cent of such disturbances.

Chart 3 shows the effect of two doses of potent serum in a case of unusual severity. The patient had diffuse bronchitis and bilateral pleurisy and was profoundly intoxicated. Large multiple painful ulcers were present on each hand. The therapeutic result was extremely good. The serum sickness was mild and

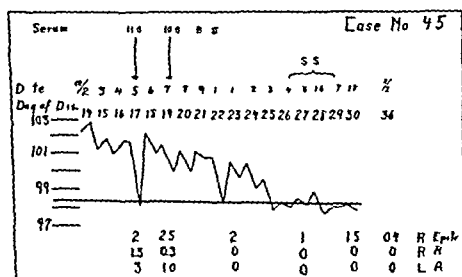


Chart 3—Effect of two doses of potent serum in a case of unusual severity

caused no constitutional disturbance as is usually the case. This patient was doing all the work in a large house and managing a large family of children with scarcely more than normal fatigue six weeks after the onset of illness.

SUMMARY

The antitularaemic goat serum has been shown to have a favorable therapeutic effect on tularaemia in man. Although approximately half of the patients are now believed to have been inadequately treated because of the testing of the variables mentioned in the first paragraph the mean duration of disease of the entire group has been reduced to almost one-half that of the control series. The duration of adenopathy and the period of disability have been appreciably and significantly shortened. The mean febrile period has not been shortened. As many of the patients were treated late in the course

of disease, and as febrile days due to serum sickness were included in the analysis, this result is not surprising. The incidence of serum sickness was somewhat high for the small amounts of serum that were used, but only four occurrences could be called severe and none were serious. The great majority were so short and so mild that they were of little consequence. The incidence of suppurative adenitis was higher than anticipated. I believe this was because insufficient serum was given to such a large proportion of the patients.

Recommendation for dosage for future patients with infections of average severity would be two intravenous injections of 15 cc each, on successive days, of an antiserum made from virulent strains of the organism. When the lymph glands are already larger than 5 cm in diameter, three such doses would be better if glandular suppuration is to be prevented. Patients with the typhoidal type should also be given serum in much larger amounts.

Most important of all is the matter of early diagnosis. If diagnoses can be made and confirmed before the tenth day of disease and if patients can be treated, I believe that many deaths can be prevented, also that most of the prolonged distress caused by tularaemia can be greatly shortened. The general use of the intradermal test in conjunction with the antiserum could make this desirable situation possible.

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IMMUNIZATION WITH BACILLUS PERTUSSIS VACCINE

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That untreated whooping cough may run a mild course has long been known. Before the days of pertussis vaccine Neurath in the first edition of Pfandl and Schlossmann's "Handbuch," says "bed-rest in a fresh, warm, dust-free atmosphere without drafts, not infrequently aborts the disease." And Pospischil, in his book "Pertussis," written after he had seen over 25,000 cases, says "Most whooping cough patients need no physician but those who do, need him badly." The outstanding pertussis vaccine study is that of the Danish physicians who injected in the Faroe Islands, 2,094 patients and 364 children as a prophylactic measure. In the Cutter Lecture, Madsen¹ says "Vaccination has no effect once the disease has broken out."

It should be used to the widest possible extent as soon as an epidemic threatens. Vaccination is most effective if completed a week before the disease breaks out.

The effect is greatest in patients showing a strong reaction at the point of injection.

No absolutely sure prophylactic effect has been obtained but the infection is lighter.

Three hundred and sixty-four children were injected one to three months before being exposed to contagion, in spite of this they all without exception caught whooping cough.

The epidemic on a whole was very light. Their conclusions differ little from my own experience with the various commercial vaccines used between 1915 and 1925. Because the advocates of pertussis vaccine failed to bring sufficiently convincing and adequately controlled evidence during

From the Evanston Hospital.
Read before the Section on Pharmacology and Therapeutics at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.
1. Madsen, T. Whooping Cough—Its Bacteriology, Diagnosis, Prevention and Treatment. Boston, M. & S. J. 1925, 50 (Jan. 4) 1925.

the twenty years that passed after Nicolle and Conor first used *Bacillus pertussis* vaccine, it was removed from New and Nonofficial Remedies in 1931.

In diagnostic cough-plate work that my associates and I have carried on since 1925, Miss Hambrecht noted that hemolysis was usually more pronounced in freshly isolated strains than in cultures long under cultivation. Bordet and Sleswyck² had found in 1910 that recently isolated strains differ serologically from old stock cultures grown without blood. Since 1925

TABLE 1—*Prophylaxis and Immunization Compared*

	Prophylaxis (Danish Study 1923)	Immunization (Livinston Study 1923-1924)
Number of susceptibles	364	94
Bacilli injected	22 billion	70-80 billion
Amount of each injection	0.5, 0.7, 1 cc 4 days apart	1, 1.5, 1.5 cc (bilaterally) 1 week apart
When exposed	1 to 3 mos. later	4 mos. to 4 years later
How exposed	Epidemic	21 controls in 24 families exposed; 29 immunized
Result	All contracted pertussis	None contracted pertussis

we have made B. pertussis vaccine according to the Danish Statens Serum Institut specifications, except for the following details. From five to seven recently isolated, strongly hemolytic strains have been selected each time the vaccine has been made, because hemolysis was considered a criterion of virulence. Since the only known habitat of the Bordet-Gengou bacillus is man (and it is naturally pathogenic only for him) the bacillus is grown on medium made with fresh, defibrinated human blood. To minimize the culture medium content, the forty-eight hour growth is scraped off and mixed with 0.5 per cent phenolized physiologic solution of sodium chloride. To insure purity a stained smear of each surface growth is examined before it is harvested. After a week in the refrigerator (during which time it is shaken daily), the concentrated suspension is cultured for sterility on three successive days. After dilution with 0.5 per cent phenolized physiologic solution of sodium chloride so that 1 cc. contains about 10 billion bacilli, it is tubed, sealed and refrigerated until shortly before it is used. Vaccine so prepared, preserved and refrigerated should possess marked antigenic value.

Between 1925 and 1928, 100 whooping cough patients and exposed susceptible children (in families with pertussis) were given three injections at intervals of four days (0.5, 0.7 and 1 cc.)—a total of 22 billion bacilli, as directed by Madsen. The only death was in an infant who contracted pertussis bronchopneumonia during the second week after the injections. Compared with 100 unvaccinated patients seen during that time (controls), no mitigation of symptoms could be attributed to the vaccine. The number of mild and severe cases in the two groups was about equal.

Since May, 1928, the vaccine has been used as an immunizing agent. Detailed evidence of active immunization, presented in a preliminary report³ has been augmented by sufficient new data to justify the present five year summary. A total of 394 selected young non-immune children have been injected with from 7 to 8 cc.

of the vaccine several months before any were exposed. In most families an older, susceptible child served as control. Since 1931, the total of from 70 to 80 billion bacilli is divided as follows. One cubic centimeter is injected into the deltoid region of each arm, a week later 1.5 cc. is injected into the biceps region of each arm, a week later, 1.5 cc. is injected into the triceps region of each arm. Last year, to determine whether the entire amount could be given in one injection, 0.7 cc. of a vaccine containing 50 billion bacilli per cubic centimeter was injected in each arm in a small series of young children. Because about 20 per cent of the injections were followed by a small, sterile local abscess the customary routine was resumed.

The parents are forewarned of a transient rise in temperature, the temporary local reactions (redness, induration and tenderness) and the subcutaneous nodules which may persist for a few weeks at the site of each injection. Their eager cooperation, although immunity is not assured, bears testimony to what extent this disease is dreaded by the parents of young children. Only two among those solicited in the course of five years did not grant permission.

The local and systemic reactions are due to the vaccine (dead bacilli and endotoxin), not to the phenol or to medium proteins. The human blood in the medium eliminates reactions due to alien blood proteins. Allergic reactions, sensitization to foreign protein or susceptibility to the Arthus phenomenon need not be feared regardless of the amount of vaccine injected or the time interval between injections. All but 3 of more than 2,000 injections were given on the scheduled day. No infection of the skin has occurred. If a very severe reaction follows an injection the next injection may be postponed a few days or only 1 cc. may be given (bilaterally) at subsequent injections and an extra one given a week after the third injection. During 1933 more than a hundred "Cradle" infants less than 3 months of age have been given 1 cc. (bilaterally) for three successive weeks—a total of 6 cc. in fourteen days. Reactions were surprisingly mild. Although it has not yet

TABLE 2—*Immunization with Bacillus Pertussis Vaccine*
(Total 70-80 Billion Bacilli)

Series	Number of Susceptibles Injected	Average Age	Number of Household Exposures	Number of Accidental Exposures	Contracted Pertussis
1928-1929	100	28 mos.	9	87	0
1930	94	18 mos.	7	44	0
1931	88	14 mos.	8	27	0
1932	103	11 mos.	5	4	0
Five year total	394	18 mos.	29	162	0
1933	85	8 mos.	0	0	0

been determined whether infants so young will develop an active immunity from a total of 60 billion bacilli, the managing director of the Cradle has requested that the injections be continued as a routine procedure.

The accompanying tables are submitted as proof that active immunity was conferred by the vaccine. In the course of five years the thirty-one control children in twenty-four of the families contracted typical whooping cough. Positive cough plates, lymphocytosis and the nature of the cough verified the diagnosis. Twenty-nine of the injected children were thus exposed to their coughing brothers or sisters. The infected were not separated from the injected, but they were urged to play and eat together throughout the quarantine period. In two families of three children each an un.injected

² Bordet J. and Sleswyck. Serodiagnostic et variabilité des microbes suivant le milieu de culture. Ann. Inst. Pasteur 24: 476, 1910.
³ Sauer, Louis. Whooping Cough. A Study in Immunization. J. A. M. A. 100: 239 (Jan. 28) 1933.

infant contracted the disease from the control child, but the child injected three years previously escaped. In one family, twin girls (controls) contracted pertussis simultaneously during an epidemic in school, their younger sister, injected four years previously at the age of 9 months, escaped. In twelve recent cases of typical whooping cough in the controls, the injected child was tête-à-tête with the coughing control at the time the (positive) cough plate was exposed. The children kissed each other at the completion of the cough plate exposure, but the injected child failed to contract the disease. The injected children were exposed daily throughout the incubation, catarrhal and paroxysmal stages, but none contracted whooping cough. Not one of the 162 injected children accidentally exposed during the five years has had a cough that in any way resembled pertussis.

Because the disease is relatively benign except for the first two years of life,⁴ and as four months should elapse for immunization to occur, injections should be started early, preferably during the second half year of life.

COMMENT

The comparative complement fixation tests of Huenekens⁵ made it seem doubtful whether vaccine several months old would be effective. The more recent work of Mishulow, Oldenbusch and Scholl,⁶ however, shows that properly prepared and preserved pertussis vaccine, stored at from 8 to 10 C, will keep its antigenic potency for several years. Leslie and Gardner⁷ have concluded that the pertussis bacillus is a uniform species without fixed types and that all strains fall into four agglutinative groups or phases. They say that "for prophylactic vaccination in the human subject phase I vaccines made from recently isolated strains are more promising than those made from old cultures." Sauer and Hambrecht⁸ in the isolation of B pertussis bacteriophage, found that freshly isolated strains differ from old laboratory cultures in morphology and colony formation.

Without a reliable immunization test (skin test), actual exposure remains the ultimate test of immunity. The data at hand lead one to believe that pertussis vaccine is not a curative agent but that, like B typhosus vaccine, B diphtheria toxoid and S scarlatinae toxoid, it will actively immunize susceptible persons. In the immunization process three factors seem to play a role: the potency (recently isolated strains grown on medium made with human blood) the dosage (twenty times the Huenekens three times the Madsen dose), and the time interval (at least several months) between injection and exposure. Until the relative importance of each factor has been determined or until potency tests or standards have been established, all details of technique should be adhered to. It is urgent that the maximum potency of the material be maintained.

In anticipation of the trials to which the vaccine might be subjected when prepared and distributed com-

mercially,⁹ the added question of age limit or deterioration assumes importance. To retard deterioration the vaccine should be preserved in nonsoluble glass vials with nonsoluble rubber stoppers and should be refrigerated until shortly before it is used by the physician. The data so far available seem to indicate that, if the vaccine is prepared, preserved and refrigerated as outlined, it probably will retain its antigenic power for twelve months (or more) after it is made. These precautions should facilitate the production and distribution of potent material.

SUMMARY

Bacillus pertussis vaccine (1 cc = 10 billion bacilli), made from recently isolated, strongly hemolytic strains, grown on Bordet medium made with freshly defibrinated human blood, has been injected as an immunizing agent in 394 selected young nonimmune subjects. The total of 7 to 8 cc (70 to 80 billion bacilli) is divided into three weekly (bilateral) injections of 1, 1.5 and 1.5 cc, respectively. In the course of five years the thirty-one control children in twenty-four of the families contracted unquestionable whooping cough. Twenty-nine of the injected children were exposed throughout the incubation, catarrhal and paroxysmal stages but none contracted the disease. Not one of 162 injected children accidentally exposed has had a cough that in any way resembled pertussis. Active immunity is completed in four months and lasts for years. Infants withstand the injections remarkably well. The best age for immunization is the second half year of life.

CONCLUSION

From 7 to 8 cc of a special B pertussis vaccine (containing 10 billion bacilli per cubic centimeter) protects the nonimmune child if the injections are completed at least four months before exposure occurs.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DR. DOCHEZ, MISS MILLS AND DR. KNEELAND, DR. HUNT, DR. FOSHAY AND DR. SAUER

DR. WILLIAM H. PARK, New York. At the Willard Parker Hospital at the beginning of the antitoxin treatment of scarlet fever, we alternated cases and found that those presenting a high temperature and especially those definitely toxic, were greatly benefited by the serum. We found that patients with a temperature of less than 102 showed but a slight benefit and we thought that was more than compensated for by the serum sickness which frequently developed. We therefore made it a rule to give the serum only to patients with a temperature of 102 or over. We found that the intravenous injections gave much more prompt results in toxic cases than intramuscular injections. More work ought to be done on the antibacterial part of the serum because when the disease has advanced to the septic stage the antitoxic serum has no effect. Apparently an antibacterial serum has a definitely curative effect in some of these cases. I certainly endorse Dr. MacVail's statement that physicians should try to know the type of microorganism concerned before they use the specific serum or the bacteriophage. I was greatly interested in Dr. Sauer's report. We have tried every method of immunization against whooping cough that has been suggested. The results on the whole were very disappointing. We have never used the amounts which Dr. Sauer is using. I think that possibly Dr. Kneeland has gone too far in denying that ordinary bacteria start a common cold. In the big epidemic of 1918 three of my technicians were accidentally sprayed by fresh influenza cultures (Pfeiffer) and two of them developed definite rhinopharyngeal colds within twelve hours. The symptoms lasted for a few

⁹ Between February and May more than seven physicians and in all cases have used the vaccine.

⁴ The League of Nations Epidemiological Report shows that about 100,000 cases of whooping cough were reported in the United States during 1932. A recent U. S. Public Health Service report shows that about 95 per cent of our 1,000 or more annual whooping cough deaths occur before the third year of life. About 2 per cent of all infected children succumb, but the mortality for infected infants is about 15 per cent. Because of its greater prevalence whooping cough causes as many deaths as does diphtheria or as many as do scarlet fever and measles combined.

⁵ Huenekens, F. I. Complement Fixation in Pertussis. *Am. J. Dis. Child.* 34, 53 (Oct.) 1931.

⁶ Mishulow, W. Lucy, Oldenbusch, Carolyn and Scholl, Marie. Potency of Sored Pertussis Vaccine. *J. Infect. Dis.* 41, 169 (Aug.) 1932.

⁷ Leslie, J. H. and Gardner, A. D. The Phases of Hemophilus Pertussis. *J. Hyg.* 31, 4, (Jul.) 1931.

⁸ Sauer, J. W. and Hambrecht, I. The Bacteriophage of Bacillus Pertussis. *J. Infect. Dis.* to be published.

days. Cultures from their nostrils and pharynx showed the same type of bacilli that was sprayed on them, and these remained prevalent for several days and then gradually disappeared in the course of the next two weeks. I am one of those who believe that many persons after exposure to chilling develop a common cold. It seems to me that persons have the very contagious colds. These are usually due to the filtrable viruses. Persons have also some endogenous infections from their own organism and some contract colds, which are probably not due to the filtrable viruses.

DR HOBART A. REIMANN, Minneapolis. Considering the enormous amount of research, progress in the specific treatment of infectious disease has been relatively meager. The greatest success has been attained with the use of antitoxin, especially in diphtheria, tetanus and scarlet fever. There have been, however, many disappointing results, especially with tetanus and even with diphtheria. It appears that in botulism, for example, different strains exist for which different antitoxins are necessary. This problem was recently found by Blake and Trask to apply also to scarlet fever. These studies probably explain the occasional failure in specific antitoxin therapy and show that various strains require specific antitoxins of their own. It is too early to become enthusiastic over the use of bacteriophage, at least for generalized infections. Certainly it should not be exploited commercially or used indiscriminately. No evidence is at hand of its lytic action *in vivo*. Evans and others have shown that bacteriophage is inactivated by blood, pus, ascitic fluid and saliva. Its concentration after injection into the blood is far too weak to justify the expectation of specific lytic action. The belief that bacteriophage may be of specific value because recovery occurred in seven of fifteen treated cases of staphylococcal bacteremia, as reported previously by Dr MacNeal, is unconvincing, as in my experience recently the mortality from this infection was about 60 per cent in untreated cases. The favorable results of vaccine prophylaxis of whooping cough reported by Dr Sauer together with the reports by Lawson and Krueger and Smythe are most encouraging and may assist in establishing the etiology of the disease. Although the weight of evidence appears to favor *Bacillus pertussis*, a number of investigators have suggested a filtrable virus as the causative agent.

DR RAYMOND P. SCHOWALTER, Milwaukee. A few years ago I made a study of statistics pertaining to pertussis from the Milwaukee County Home for Dependent Children covering a period of sixteen consecutive years. During the first eight years of this period no children received pertussis vaccine while during the following eight years every child under 6 years of age was given pertussis vaccine or pertussis immunogen as a routine. The injections were given to 2,700 children, nevertheless there were more than twice as many cases of pertussis per thousand children during the period that vaccine was used than there were during the period when no vaccine was used. Dr Sauer seems to have found a method of preparation and a method of administration of pertussis vaccine that will protect a child from whooping cough just as certainly as toxoid protects against diphtheria. His success in immunizing against pertussis is probably due to two factors. The first factor is the preparation of the vaccine. He uses only fresh cultures obtained every few months from active proved cases of pertussis. The second contributing factor is the tremendous dosage. With the various commercial preparations a prophylactic course of injections utilizes from 7 to 27 billion organisms, depending on which preparation is used. In Dr Sauer's course of prophylactic injections 80 billion killed pertussis bacilli are injected into each child. At the Milwaukee County Home for Dependent Children, seventy-five children ranging in age from 6 months to 2 years have recently received Dr Sauer's vaccine. There was some local reaction and fever on the day following the injection. The reactions were similar to those encountered with some of the commercial vaccines formerly used. If no pertussis epidemic develops before the necessary four months has elapsed between the last injection and the exposure, it will be possible to arrive at some definite ideas regarding the efficacy of the vaccine.

DR PAUL S. RHOADS, Evanston, Ill. Certain questions about antitoxin still arise. Will it do more than simply lessen toxemia? Will it be effective in preventing septic complica-

tions? Dr Hunt's figures show that, even when given late antitoxin materially reduces the morbidity and mortality in septic cases. If enough antitoxin is given early, septic complications rarely develop. Gordon asserted that immunotransfusion of from 100 to 500 cc of blood from convalescent scarlet fever patients is superior to antitoxin in severe septic cases. His results do not bear out this contention. Among 119 cases of severe septic type treated by immunotransfusion in Gordon's series there were 19 fatalities. In Hunt's series treated by antitoxin 14 of 120 septic patients died. In ten of Hunt's fatal cases antitoxin was given after the fourth day of illness. I have recently determined the antitoxic titer of ten pooled lots of convalescent scarlet fever serum. The highest potency obtained was 500 neutralizing units per cubic centimeter. No market samples of commercial preparations tested had a potency under 15,000 neutralizing units per cubic centimeter. These tests indicate that to give a patient as much antitoxin as he receives in a therapeutic dose of commercial antitoxin, usually 15 or 20 cc of concentrated and refined horse serum, one would have to give 600 cc of convalescent serum. At the Serum Center of Michael Reese Hospital in Chicago convalescent scarlet fever serum is distributed in doses of 20 cc for therapy and 10 cc for prophylaxis. The data just given, and also clinical trial show that this dosage is inadequate. Even 20 cc of convalescent serum seldom renders a susceptible person Dick negative. I have observed persons receive this dose and develop scarlet fever one or two days later. In my experience a prophylactic dose of scarlet fever antitoxin 100,000 neutralizing units has always rendered susceptible persons Dick negative within twenty-four hours. It has never failed to afford complete passive protection when given before the rash. In Gordon's series in which up to 80 cc of convalescent serum was used therapeutically, the results were better than in untreated cases but not so good as in cases in which scarlet fever antitoxin was given. There is a quantitative element in the use of scarlet fever antitoxin that must not be neglected.

DR WALTER M. SIMPSON, Dayton, Ohio. The methods employed by Dr Foshay in the preparation of the detoxified suspension for the intradermal diagnostic test and the desensitizing antitularense serum represent a distinct departure from the methods and principles commonly employed. I have been able to confirm the specificity of the skin test in all of twelve recently encountered serologically confirmed cases of tularemia. In six instances Foshay's antitularense goat serum was used in the treatment of the disease. When contrasted with observations on more than 100 untreated cases observed in Dayton the prompt subsidence of the prominent symptoms and signs, particularly as related to the fever curve and the regional adenopathy, left little doubt as to the efficacy of the treatment. In all but one, however, there was recurrence of the fever and glandular enlargement and in three instances surgical drainage of the regional suppurative adenitis was required. Because of the desire to observe the effect of a single intravenous injection of the antiserum, a second injection was not given. Preliminary observations with this small number of cases led to the conclusion that (1) the antitularense serum of Foshay apparently exerts a specific favorable influence on the disease, (2) at least two or three injections of the antiserum will probably be required in most cases, (3) the intradermal diagnostic test should be employed in the first week or ten days of the disease in order that the antiserum may exert its greatest benefit in lessening the morbidity and mortality.

DR GILBERT J. LEVI, Memphis, Tenn. In 1926 the *Tennessee State Medical Journal* published my report of 102 cases of scarlet fever treated with Squibb's scarlet fever antitoxin. At that time I also ran a control series and likewise a series of cases treated with Dochez's antitoxin. The results were uniformly better in the group treated by Squibb's antitoxin. Up to the present I have treated 600 cases. Since 1926 I have employed scarlet fever antitoxin in every case. I have had uniformly good results. The percentage of serum sickness was 30.5. With the administration of antitoxin of any type epinephrine hydrochloride, 1:1,000 solution was used. Complicating mastoiditis and nephritis have been conspicuous by their absence.

DR LUKE W. HUNT, Chicago. In answer to Dr Parks' question as to why antitoxin was not given in many of the

mild and moderately severe cases, I must say that for some time after the development of the antitoxin it was given to only the sickest patients. Later it was given to all acutely sick patients and still later to all patients admitted to the hospital soon after the development of the disease. In scarlet fever immunity whether occurring spontaneously or produced artificially by the injection of toxin or by the injection of antitoxin there is a quantitative element which must be taken into consideration if one is to obtain the best results.

DR WARD J. MACNEAL, New York. I think that the question of the effectiveness of the bacteriophage in infections of the blood stream is not yet ready for final decision. A stock bacteriophage is first used in the bacteremia cases, because in most instances it is feared that death will occur within twenty-four or forty-eight hours. At the same time the culture that has been obtained from the blood stream is being studied and at the earliest possible moment an autogenous filtrate is substituted. Sometimes it happens that the stock bacteriophage proves to be worthless. Usually by that time the patient has died. The serum is prepared in the laboratory of the state department of health of New York under the supervision of Dr. Augustus Wadsworth. He designates it as concentrated streptococcus serum for experimental purposes. It is not available for general distribution and has been given out to a limited number for experimental work. It appears to be an exceedingly valuable serum. I have used it almost exclusively in doctors, nurses, laboratory workers and members of their families.

DR LOUIS W. SAUER, Evanston, Ill. In regard to Dr. Park's question as to an explanation for the difference between Dr. Madsen's results and mine, I wish to say that my vaccine differs from all other pertussis vaccine. It is made only from recently isolated strains and is grown only on human blood. The dosage is at least three times that of any other dosage and the time interval is probably the most important factor. Three or four months should elapse or intervene between completion of the vaccine administration and exposure to the disease. During the five years that this work has been going on, people wanted their children injected while whooping cough was in their neighborhoods. This was done and in a number of cases within one or two months after the injections were begun, these children contracted pertussis. But in no case in which the time interval was more than three months has any child contracted pertussis, although as the charts show, eighteen were intimately exposed to control cases in the family. In regard to a filtrable virus, I am well aware that several investigators have brought up the question of intracellular inclusion bodies. When one remembers that the mortality of pertussis is between 1 and 2 per cent that it is a relatively benign disease, the question of finding intracellular inclusion bodies at autopsy of the relatively few patients who die is a far jump from making it an etiologic factor. Indeed, these very experiments of active immunity induced by vaccine made of the Bordet-Gengou bacillus are I believe the strongest argument against the now fashionable filtrable viruses. In regard to Dr. Rhoads' question a few agglutination tests were performed but I believe that immunity and agglutination or complement fixation are not the same things. The height of an agglutination or complement fixation test does not imply that the highest immunity is then reached. The wonderful work on agglutination in Denmark shows that children getting a small dose as 22,000,000,000 developed an agglutination peak a few weeks after the administration of vaccine. But the same children exposed within one to three months all contracted the disease. In the preliminary work a great number of white cell counts and differential counts were made before the vaccine was administered and then on the day of the first injection. A number of children had white counts that reached or exceeded 50,000. The lymphocytosis in many of the cases was almost that of pertussis.

DR ILL. FOSHAY, Cincinnati. I should like to suggest to Dr. Sauer that he try one of the methods of chemical detoxication in his pertussis suspension is that Dr. Wherry and his associates used in Cincinnati. I feel certain that if the proper chemical is found he will be able to inject the same amount of bacteria and have less constitutional reaction without impairing the antitoxic or immunizing properties of his suspension.

It is quite probable that formaldehyde half saturated urea or nitrous acid would work very well. My answer to Dr. Park's question is that at the time I began the goat was the largest animal I could find space for. Sheep make a good antitularense serum and this year I have what seems to be a very good antitularense serum in the horse. I have no illusions that the antiserum as made so far is the best that can be prepared. Having eliminated some of the variables as to manner of production and manufacture and preservation, I believe that I am following what Dr. Simpson indicated in his discussion, namely, that the patients need more serum. I know now that half of my patients did not get enough serum. When I compare the patients in whom I used two doses, each time from 15 to 18 cc. with the control group I find that the duration of the disease was reduced by 75 per cent.

DR YALE KNEELAND, JR., New York. I think Dr. Park is right. There is such a thing as a pure bacterial cold. Our observations on filtrable viruses and our general hypothesis as to the etiology of these disorders are based on the ordinary outbreaks of highly communicable upper respiratory disease.

CONGENITAL OBSTRUCTION OF THE SMALL INTESTINE

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This paper is based on a study of sixty cases of congenital intestinal obstruction occurring in the Children's Hospital of Boston. Only those cases are included in which the obstruction was located in the small intestine and was due to one of two factors. Intrinsic obstruction is the interference in the continuity of the lumen of the intestine due to intrainstestinal defects. Extrinsic obstruction is the interference in the function of the intestine by external pressure due to faulty rotation. Obstruction caused by bands which may or may not be of congenital origin and that due to hernias and the vagaries of Meckel's diverticulum are not included.

EMBRYOLOGY

To understand these conditions one must consider the normal embryologic development of the intestine. Most of the embryologic events take place between the fifth and tenth weeks of fetal life. Prior to the fifth week of fetal life the intestine presents a well defined round lumen lined with epithelium. Soon after this the epithelium rapidly proliferates and the lumen of the intestine becomes obliterated by epithelial concrescence. This solid stage persists for a short time until vacuoles appear and coalesce to reestablish permanently by the twelfth week of fetal life the intestinal lumen. An arrest in development during this period results either in atresia of the intestine at one or more points or in stenosis. The atresia of course is due to complete lack of continuity with a blind end or to a remaining imperforate septum (fig. 1) while the stenosis is due to a remaining but perforated septum. The intestine above the point of obstruction becomes dilated while that below remains collapsed. In cases of atresia the intestine below the point of obstruction appears as a small cord though it has all its normal elements including a lumen. This lumen, never having had any amniotic fluid in it to dilate it, remains only large enough to admit a small probe. In cases of stenosis the intestine below the point of obstruction remains small but not as small as in cases of atresia. In the

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cases with a complete lack of continuity of the bowel, the blind ends may be multiple. This condition is less easily explained by an arrest in normal embryologic development.

The cases of extrinsic obstruction due to faulty rotation present a variety of conditions which are extremely confusing unless one remembers the normal process of rotation through which the bowel goes. After the fifth week of fetal life the liver and other contents of the abdominal cavity grow much more rapidly than the cavity itself. Nature meets this situation by forcing the midgut into the base of the umbilical cord. By the tenth week of fetal life the return of the midgut loop to the abdominal cavity has begun. The pre-arterial segment, which includes the small intestine from the duodenum to the vitelline duct, returns first and passes from the right to the left side behind the superior mesenteric artery. The terminal ileum, cecum and ascending and transverse colon follow and cross in



Fig. 1—The septum across the duodenum (a) the result of arrest of development at the solid stage (b) duodenojejunostomy for relief of the duodenal obstruction caused by (a)

front of the superior mesenteric artery from left to right. This leaves the duodenum behind the superior mesenteric artery and the rest of the midgut lateral to or in front of it. At this stage of development the midgut is attached to the posterior abdominal wall by a very small pedicle at the origin of the superior mesenteric artery. An arrest of development at this stage leads to the postnatal complication of volvulus of the midgut. The next stage consists in the mesentery of the intestine becoming fused with the parietal peritoneum, giving the small intestine its normal oblique attachment and the cecum and ascending colon their normal stabilizing attachment to the right side. Abnormal attachment of the intestine to the posterior abdominal wall leads to a variety of conditions causing intestinal obstruction.

INCIDENCE

In this series of sixty cases, the incidence showed the slight predominance of thirty-three male to twenty-

seven female patients. There were twenty cases of obstruction due to abnormal rotation and forty cases due to intrinsic defects. The site of obstruction was in the duodenum alone nineteen times, in the jejunum eight times, in the ileum twenty-seven times and in more than one site six times.

DIAGNOSIS

The predominant symptoms in patients with congenital intestinal obstruction, as with any form of intestinal obstruction, are pain or discomfort, vomiting and lack of stools. Among the prominent signs may be mentioned abdominal distention, visible peristalsis or coils of intestine, evidence of shock, dehydration and ketosis. In the particular group of cases under consideration there are exceptions to the usual findings in individual cases. Thus there are patients with duodenal atresia in whom the vomiting was so effective that the stomach and duodenum were completely emptied, and the distention and visible peristalsis were lacking. Likewise in those patients with volvulus of the midgut the obstruction takes place first at the duodenal end so that distention is not marked.

It is of course, highly desirable for technical reasons to make as accurate a diagnosis as possible before the operation is undertaken. The examination of the stool and a roentgen examination without, as well as with, the administration of contrast mediums are of great assistance in this respect. One remembers that meconium begins to collect in the intestine after the third month of fetal life and that any atresia that has taken place prior to this time precludes the possibility of finding the normal elements of meconium in the stools. The normal elements of meconium consist of mucus, bile, keratinized epithelial cells, lanugo hairs and vernix caseosa swallowed with the amniotic fluid. Of these elements the easiest to recognize, and one that is constant, is the keratinized epithelium. This may be detected satisfactorily in a smear dried with ether, stained with Sterling's gentian violet for one minute and decolorized with acid alcohol. Failure to find these keratinized epithelial cells in the stools is an indication that one is dealing with a case of atresia, as pointed out by Dr. Sidney Farber, pathologist of the Children's Hospital. If an x-ray plate of the abdomen is taken without the administration of any contrast medium, the point of obstruction, if complete, is clearly identified by the outline of the gas above the blind end (fig. 2). In fact, the administration of barium is contraindicated if one suspects complete obstruction as it tends to block the small lumen below an anastomosis. If a flat plate has demonstrated gas distributed throughout the abdomen and the child is not too ill, barium may be given and valuable information obtained.

TREATMENT

When the diagnosis of obstruction has been made, there should be no delay in instituting surgical treatment. The patient is prepared for operation by the administration of parenteral fluids to counteract dehydration and ketosis. A right rectus or right paramedian incision is made high or running above and below the umbilicus, according to the site of the obstructing lesion. For patients with intrinsic duodenal obstruction it is my belief that a duodenojejunostomy is preferable to a gastrojejunostomy. This belief is based on experience with one patient on whom a gastrojejunostomy was performed when she was 6 days old. She required a duodenojejunostomy at the age of 7.

months for the relief of duodenal stasis, even though the gastrojejunostomy stoma was open and functioning well. Complete relief followed the second operation. Of course, it must be admitted that a gastrojejunostomy is a much easier operation to perform, but should only be employed when the infant's condition does not warrant the preferable operation of duodenojejunostomy.

In these small infants the anastomosis itself demands special technique. The distal loop is so small that it must be dilated before an anastomosis can be performed. This dilation may be accomplished with air, as recommended by Clogg¹ in 1904 and by Webb and Wangenstein² in 1931, or following the technique I have used. This technique consists in opening the lower loop, dilating it with a small catheter and completing most of the anastomosis before the catheter is withdrawn (fig 3). The distal loop is too small to allow more than one row of sutures, and these must be of very fine silk. One row of Connell sutures of the fine silk intended for anastomosis of the blood vessels has proved adequate. This technique is also used for anastomosis when the atresia is lower in the intestine. It should be remembered that it is worth while performing an anastomosis even when the distal end of the bowel looks too hopelessly small to function. It acquires an adequate lumen much more quickly than seems possible after fluid has entered it (figs 4 and 5). In cases of atresia the blind end tends to perforate especially when it is situated low in the intestine. There have been eight such cases in this series. It has been stated that these patients never recover following enterostomy. There are exceptions to all rules, and in our series there is one patient who had perforation in the terminal ileum and diffuse peritonitis. This patient had a resection of 4 or 5 inches (10.16 or 12.7 cm) of terminal ileum with an enterostomy when 7 days old, and at a later date an ileocolostomy was performed, with recovery. As a general rule however it is more desirable to perform an intestinal anastomosis at the first operation. One then relies on fluid from above as well as saline enemas for dilation of the distal segment. The combination is much more effective than the enemas alone.

Certain procedures are essential to treat obstruction due to faulty rotation successfully. The whole midgut must be delivered to show what type of operation is required. It must be remembered that a volvulus in a clockwise direction is the more common but it may take place in an anticlockwise direction. Reduction

of the volvulus is the first stage of the operation and has, in my experience, caused temporary relief but not cure. After the volvulus has been reduced, any attachment of colon or ileum to the right of the duodenum is freed until the duodenum is entirely in view and lies to the right of the cecum and terminal ileum. In every case in my series in which this has not been done there has been recurrence of the obstruction. In no case in which this has been done has there been a recurrence. There are other cases of obstruction due to faulty rotation which are not associated with volvulus. In some instances the rotation has proceeded to a point at which the cecum becomes attached to the posterior abdominal wall and impinges on the duodenum at its point of crossing. In other instances one section of the intestine appears to perforate the mesentery of another section, and obstruction is caused at this point. The latter condition is likely to be erroneously considered as a hernia. Both of these conditions have been relieved by incision of the posterior parietal peritoneum on the right side and transference of the portion of the intestine causing the obstruction to the left. In other words, an earlier state of embryologic development is restored.

REPORTS OF TYPICAL CASES

One case report of each type is given to illustrate more specifically the conditions actually found.

CASE 1—Duodenal Obstruction Due to Malrotation—T. C., an 11 month old male infant, was admitted to the medical service because of daily vomiting since birth. The vomiting occurred a few hours after each feeding, was in the form of regurgitation and totaled about 100 cc each time. The vomitus was of fluid consistency and bile-stained. In spite of the repeated vomiting, the patient gained weight until the tenth month, but after that time he failed to gain.

Physical examination gave negative results. Barium sulphate was given by mouth, and a partial obstruction of the duodenum due to malrotation of the colon was found. The patient was discharged home on the parent's request and returned in two weeks for a second barium study which showed the same condition. Surgical intervention was advised. At this time the baby had lost 1½ pounds (0.7 Kg) of his maximum weight and seemed to be distinctly regressing. Physical examination showed slight visible peristalsis in the epigastrium and little else of note.

Operation revealed the stomach to be slightly enlarged, the pylorus patulous and the duodenum markedly dilated. The cecum was attached in the right upper quadrant at about the level of the kidney and impinged on the duodenum causing intermittent obstruction. The cecum was delivered into the wound and by dissection, freed from the posterior peritoneum so that it could be pushed to the midline, thus exposing the duodenum throughout its entire length. At the duodenojejunal junction there was a definite constriction formed by malattachment of the cecal mesentery. Freeing of this and moving the cecum to the midline completely relieved the obstruction.

Following operation the patient had a stormy course the temperature remaining around 105 and 106 F for four days. This was due to continued vomiting, resulting in dehydration which was combated with intravenous injections of dextrose and subcutaneous hypodermoclyses of saline solution. On the



Fig 2—Roentgenogram from the same case as figure 1 showing clearly the point of obstruction in the duodenum without the ingestion of contrast mediums.

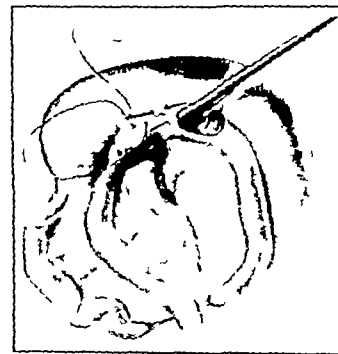


Fig 3—Technic of anastomosis with a single row of fine silk sutures and the insertion of a catheter for dilating the distal segment.

¹ Clogg, H. S. *Lancet* 2: 170, 1904.
² Webb, C. H. and Wangenstein, O. H. *Congenital Intestinal Atresia*. *Am. J. Dis. Child* 12: 26, (Feb.) 1931.

fourth day after operation, the vomiting ceased, the temperature became normal, and the bowels moved freely. From that time on all feedings were retained, the bowels moved normally, and the patient progressed satisfactorily. At the end of the first week the patient had gained 14 ounces (0.43 Kg). The last report, six months later, stated that the child was in excellent health, was gaining weight and apparently was normal in every respect.

CASE 2—Duodenal Obstruction Due to Intrinsic Stenosis—
B. S., a 6 day old female infant, was admitted to the Children's



Fig. 4—The jejunal blind end distended bowel above and rudimentary collapsed bowel below

Hospital because of vomiting since birth. The vomitus at first consisted of ingested food which was bile-stained. Two days before entry the vomitus contained frank blood for which a transfusion of citrated blood was given. Meconium was passed during the first forty-eight hours, but from that time on there had been no stools. Parenteral fluids had been given for four days before entry. On admission, examination revealed a full epigastrium and an empty hypogastrium. There was visible gastric peristalsis. Roentgen examination showed a

dilated duodenum and stomach with a very small amount of gas in the rest of the intestine. Operation was advised and performed after the administration of more parenteral fluids.

At operation the jejunum was found to be collapsed, while the duodenum that could be visualized was markedly dilated. The patient was in such poor condition that a duodenojejunostomy was not attempted. A gastro-enterostomy was performed in the usual manner and the patient returned to the ward in poor condition.

Parenteral fluids were continued for two days after operation to supplement the limited feeding. At the end of forty-eight hours the baby began to have normal stools. She gained weight steadily and was discharged one month later.

The patient did well for seven months. At that time she became anorectic and failed to gain weight. Feedings were changed but the situation remained the same. The patient was admitted to the hospital for further study. Barium given by mouth, entered the stomach readily and passed out through the stoma without difficulty. However, some of the barium entered the duodenum churned back and forth, and returned to the stomach. Gastric analysis revealed achlorhydria. Variations in the diet, with the administration of brandy to stimulate the secretion of hydrochloric acid, were given. As twenty days of this regimen resulted in no improvement, and as it was thought that the regurgitation of duodenal contents into the stomach caused the anorexia, further operative relief was advised.

At the second operation a duodenojejunostomy was performed. Following this procedure the patient gained weight rapidly and had no more difficulty. The last report, two years later, revealed the baby to be in excellent health and having no symptoms of gastro-intestinal disturbance.

CASE 3—Duodenal Obstruction Due to Intrinsic Stenosis—
H. G., an 8 year old girl, entered the hospital because of loss of weight, anorexia and discomfort in the abdomen. She had been apparently well until one year before entry, except for measles at 4 and pertussis at 5 years of age. One year before entry she began complaining of discomfort in the epigastrium, most marked after eating, belching of gas of bad odor and entire loss of appetite. The stools had been small and constipated. She had lost 15 pounds (6.8 Kg) during the year and 10 pounds (4.1 Kg) in the two weeks prior to entrance, in spite of having had excellent medical care. The patient

was listless and obviously was somewhat under normal weight. Nothing abnormal was found on examination except fulness in the epigastrium with a suggestion of gastric peristalsis following the ingestion of fluid. Roentgen examination showed a dilated duodenum with to and fro peristalsis and retention indicating duodenal stenosis.

At operation a dilated pylorus and duodenum were found, the obstruction being intrinsic in the third portion. A duodenojejunostomy was performed. The convalescence was untroubled.

Three months later the patient was reported to have a good appetite and no epigastric distress or belching, and to have gained 20 pounds (9 Kg).

CASE 4—Jejunal Obstruction Due to Intrinsic Atresia—
R. K., a 7 day old female infant, born one month prematurely, entered the hospital because of vomiting all of her feedings since birth. The epigastrium became markedly distended after each feeding, which was succeeded by vomiting and subsidence of the distention. The vomitus was consistently bile-stained. For the first two days meconium was passed by rectum but since that time there had been no stools. The birth weight had been 5 pounds and 9 ounces (2.57 Kg) and had decreased in seven days to 4 pounds and 2 ounces (1.86 Kg).

Physical examination revealed a well developed, premature, apathetic infant with loose wrinkled skin and very little subcutaneous fat. The epigastrium was distended and the hypogastrium empty. Intestinal patterning and visible peristalsis were noted in the epigastrium. A roentgenogram taken on admission showed a markedly dilated stomach and duodenum. There was no gas in the lower portion of the small intestine or in the large intestine. An intravenous injection of dextrose, 10 per cent, and a hypodermoclysis of saline solution were given immediately and repeated in six hours.

Exploratory laparotomy was then done, and a complete atresia of the first portion of the jejunum was found 3 cm below the first atresia was a second atresia. A jejunojunostomy was then done between the dilated and the collapsed loops. Following operation, hourly administration of parenteral fluids kept up the correct intake of fluid. For the first six days



Fig. 5—From the same case as figure 4 showing the normal size of the bowel below the blind end. This was produced in two months as the result of anastomosis and distending enemata.

the baby vomited practically all of her feedings and passed nothing by rectum. Enemas were given every four hours for the purpose of dilating the colon. During this time she had lost weight to 3 pounds and 8 ounces (1.6 Kg). On the evening of the sixth day a large, formed stool containing digested food and bile was passed. From that time on the baby took her fluid well, had normal stools and gained progressively. Feeding was extremely difficult in this infant and consisted of half

whew and half breast milk until the eighth day, when the whew was decreased by drachm amounts until she was able to take 1½ ounces (45 cc) of breast milk every three hours, at the end of two and a half weeks after operation.

The patient continued to gain and was ready for discharge at the age of 2½ months, when she acquired a respiratory infection which developed into diffuse bronchopneumonia, she died four days later. Autopsy revealed the intestine, which was found collapsed at operation to be well dilated and the anastomosis to be functioning perfectly.

RESULTS

In the literature hundreds of cases are reported, but the vast majority of them are postmortem observations from patients who had either been unsuccessfully operated on or who died before operation was performed. In 349 articles, however, are found the reports of 15 patients in the age group in this article (from birth to 12 years of age, inclusive) with obstruction of the small intestine due to malrotation, who have been

TABLE 1—Operative Treatment of Extrinsic Obstructions

Site of Obstruction	Operation	Result	
		Deaths	Recoveries
Duodenum 11	Ladd's operation	3	8
Duodenum 3	Reduction of volvulus	3	0
Duodenum 3	Unclassified	0	0
Duodenum 1	Anterior gastro enterostomy	1	0
Jejunum 1	Ladd's operation	0	1
Ileum 1	Ileo ileostomy	1	0
Total		11	9

successfully treated by operation. Four cases are reported by Waugh,³ two by Green⁴ and one each by Higgins,⁵ Rixford,⁶ Ombredanne,⁷ Lee and Nye,⁸ Kotzareff,⁹ Jewsbury and Page,¹⁰ Foisy,¹¹ Frank,¹² and Davis.¹³

In these articles are also reported histories of fourteen patients with atresia or stenosis of the small intestine who recovered following operation. In every instance the operation was a primary anastomosis. Weeks and Delprat,¹⁴ Bolling,¹⁵ Ernst,¹⁶ and Richter,¹⁷ each reported one case of duodenal atresia, Sweet and Robertson,¹⁸ one case of jejunal atresia, and Denmer,¹⁹ and Fockens,²⁰ each one case of ileal atresia, all with recovery. Lottman²¹ reported from the literature two cases of duodenal atresia with recovery which appeared to be wrongly classified. Cole²² reported three cases of duodenal stenosis relieved by gastro-enterostomy. Dubose,³ Downes,²⁴ and Cameron,² each reported one case of duodenal stenosis and Rotter²⁶ one case of ileal stenosis with recovery.

In my series of sixty patients there were twenty in whom the obstruction was due to malrotation. Of these twenty, nine recovered. The nine patients recovered as the result of the freeing operation described in this paper as the final procedure. Two of them had had a reduction of volvulus followed by recurrence of

the obstruction which required the freeing operation for permanent relief.

There were forty patients with obstruction due to intrinsic causes. Of these, eight recovered. In five patients the stenosis was in the duodenum; all of them were relieved by duodenojejunostomy. One of the patients had had a previous gastrojejunostomy which had given only temporary relief. One patient with ileal stenosis was cured by resection and ileocolostomy. One patient had an atresia of the jejunum. A jejunojejunostomy was performed, it afforded complete relief. However, this patient contracted pneumonia two months later and died. Autopsy showed the anastomosis to be functioning perfectly with dilatation of the distal segment to normal size. Another patient had an atresia of the terminal ileum with perforation and diffuse peritonitis. He had a resection of 4 or 5 inches of terminal ileum and an ileostomy performed on the seventh day of life. An ileocolostomy was done when he was 2 months old. He reported at the hospital when 1 year old and was well at that time.

SUMMARY AND CONCLUSIONS

I believe that these conditions are much more common than is usually supposed. This belief is founded on the fact that in a comparatively few years sixty patients with such conditions have appeared at the Children's Hospital, and from the fact that a large number of cases are reported in the literature.

If these conditions are kept in mind and adequately treated, a great many lives will be saved in the future which have been forfeited in the past.

TABLE 2—Operative Treatment of Intrinsic Obstructions

Site of Obstruction	Operation	Result	
		Deaths	Recoveries
Ileum 20	Ileostomy (1 with resection)	20	0
Ileum 5	Ileal anastomosis (resection of 2)	3	2
Jejunum 3	Jejunal anastomosis	2	1
Jejunum 1	None	1	0
Duodenum 6	Duodenal anastomosis	1	5
Duodenum 1	Gastro enterostomy	1	0
Duodenum 1	Jejunostomy (for feeding)	1	0
Multiple 3	Unclassified	3	0
Total		32	8

Twenty-nine patients of the age group included in this paper are reported relieved in the 349 articles reviewed. In a series of sixty cases from the Children's Hospital of Boston a report of seventeen more patients who have been relieved is added.

ABSTRACT OF DISCUSSION

DR ALBERT H. MONTGOMERY, Chicago. The etiology of congenital obstruction of the small intestine has been ascribed to errors in the development or to disease of the fetus. Dr. Ladd's series of cases is restricted to those in which the obstruction is due to errors in development such as failure of normal canalization of the intestine and improper rotation. These imperfections in development are obviously the logical explanations in most of the cases. To these may be added the suggestion of Bland Sutton that the obstruction is associated with the site of an embryologic event such as the place of attachment of the vitelline duct and the second portion of the duodenum where the liver and the pancreas form. There is, however, a smaller group of cases in which the occlusion is probably due to some disease of the fetus. Knox has called attention to congenital adhesive bands. In other cases fetal peritonitis may be present. Cases of aplasia may be due to an intra-abdominal accident before birth which produced a tear of the intestine and its mesentery leaving a definite defect in

1. Waugh, C. F. Brit. J. Surg. 15: 438 (Jan.) 1928.
2. Green, T. M. Surg. Gynec. & Obst. 53: 734 (Dec.) 1931.
3. Higgins, T. T. Brit. J. Surg. 11: 382 (Oct.) 1923.
4. Rixford, F. Ann. Surg. 72: 114 (July) 1920.
5. Ombredanne, Bull. et mem. Soc. d. chirurgiens de Paris 44: 688 1919.
6. Lee, A. E. and Nye, L. J. J. Austr. 2: 18 (July) 2 1937.
7. Kotzareff, A. Bull. et mem. Soc. d. chirurgiens de Paris 46: 1195 1930.
8. Jewsbury, R. C. and Page, M. Proc. Roy. Soc. Med. 16: 50 (June) 1923.
9. Foisy, F. Bull. et mem. Soc. d. chirurgiens de Paris 44: 1548 1919.
10. Frank, F. S. Ztschr. f. Kinderh. 9: 99 1913.
11. Davis, J. S. M. J. Austr. 1: 585 (May 3) 1930.
12. Week, A. and Delprat, C. D. S. Clin. North America 7: 1193 (Oct.) 1927.
13. Bolling, I. W. Ann. Surg. 57: 543 1926.
14. Ernst, N. P. Brit. M. J. 1: 44 (May 1) 1916.
15. Richter, H. M. in Alt, I. A. Pediatrics Philadelphia W. B. Saunders Company 7: 512 1930.
16. Sweet, C. B. and Robert on, C. Arch. Dis. Childhood 2: 146 (June) 1927.
17. Denmer, F. Arch. f. klin. Chir. 147: 471 1927.
18. Fockens, I. Zent. allg. f. Chir. 38: 532 1911.
19. Lottman, C. R. in M. S. 1: 107 21 (July) 1927.
20. Cole, W. H. Congenital Malformation of the Intestinal Tract and Its Effects in Infancy and in Childhood Arch. Surg. 22: 271 (Nov.) 1931.
21. Dubose, F. C. Surg. Gynec. & O. 20: 28 (Sept.) 1919.
22. Downes, W. A. Ann. Surg. 66: 431 (Oct.) 1917.
23. Cameron, H. C. Brit. M. J. 1: 765 (Apr. 15) 1925.
24. Rotter, I. W. Dtsch. Ztschr. f. Chir. 219: 30 1929.

both In regard to the diagnosis, it would seem rational to assume, with Dr Ladd, that the absence of cornified cells from the stools is indicative of an obstruction somewhere along the alimentary tract. The use of the x-rays is important, but I think a word of warning should be given. The diagnosis can be made in most instances without them, and there is a very definite possibility that the barium may cause obstruction in cases of stenosis with a small opening. It is almost impossible to wash out this barium, and if an anastomosis is necessary it is very disadvantageous. The outlook for these cases will always be doubtful but Dr Ladd has shown that with an early and careful diagnosis a fair percentage of them can be cured. The most hopeful cases are those presenting obstruction due to congenital bands that merely require incision. Duodenal obstructions that can be relieved by an anastomosis offer a fair prognosis. For those situated in the jejunum or ileum the outlook is not so good. Too often the malformation of the intestine precludes any type of curative operation. I am quite in accord with the treatment that he has outlined in the cases of faulty rotation. It is founded on sound surgical principles, as the results clearly indicate. One could hardly disagree with the work of a surgeon who can show such outstanding results in these difficult cases.

DR W. H. COLE, St. Louis. At the St. Louis Children's Hospital, during the past fifteen years, there have been twenty-four instances of intrinsic obstruction of the small intestine. All the patients except one were operated on, but only six survived the operation. In the group of twenty-four cases, the obstruction occurred at the duodenum in nine instances. The obstruction in this duodenal group was due to a stenosis in four instances. A gastro-enterostomy was performed in all four instances, with three survivals. It could not be determined whether the obstruction was complete in these three cases but the evidence was quite convincing that it was in one instance. In the remaining cases of duodenal obstruction four of which were due to congenital bands, the patients died following operation. However, on the four occasions in which the obstruction was produced in the terminal ileum by a congenital band, two of the infants survived. Atresia with interruption of the intestinal wall occurred five times in the ileum (in one instance was multiple) and once in the duodenum and jejunum. Four of these seven patients were treated by anastomosis and three by ileostomy, but none survived. On one occasion a stenosis of the pylorus was encountered. A plastic operation was performed and the infant survived. Two patients with imperforate diaphragm of the ileum and one with perforate diaphragm were operated on but all died. Perhaps the most remarkable case in our series was one of atresia of the ileum 10 inches above the cecum in which operation was performed by Dr N. A. Womack. A cystic mass 10 cm in diameter was found in the mesentery near the blind loops and was attached by a fibrous cord to the proximal loop. At autopsy, performed by Dr Margaret Smith, numerous short interrupted coils of tissue about the size of the distal loop of intestine were embedded in the wall of the sac. On cut section some of these coils revealed a lumen, and microscopically, intestinal mucosa was found. It seems probable that several inches of ileum became intussuscepted into the vitelline duct early in fetal life and were pinched off when the continuity of the vitelline duct with the ileum was destroyed. On three occasions an incomplete obstruction of the duodenum produced by malrotation was found. Two of these three infants survived operation.

DR FRANK K. BOLAND, Atlanta, Ga. A woman, aged 44, the mother of two children, who had enjoyed fair health most of her life, had an occasional attack of indigestion and vomiting. About a year before I saw her another surgeon made the diagnosis of duodenal ulcer and a posterior gastro-enterostomy was performed. There was no history of any particular trouble in infancy. She was better for a few months after which she began to vomit again and to lose weight. When I first saw her she weighed 70 pounds (32 Kg.) and two thirds of a barium meal remained in her stomach after six hours. Following a blood transfusion the abdomen was opened and a thickened pylorus was made out, which was thought to be either an ulcer or persistent hypertrophic obstruction. The patient's condition was bad and only an anterior gastro-enterostomy was done. At first the reaction was violent the

patient vomiting constantly. With the use of continuous saline and dextrose venoclysis, as practiced by Hendon, the condition grew better and the patient was able to take food. By the eleventh day she had improved so much that she was talking about going home, when suddenly she had a severe coughing spell and began vomiting again, fever, abdominal pain and distention developed, and the patient died the next day. Autopsy showed that there was no obstruction at the pylorus or at either gastro-enterostomy and that no duodenal ulcer was present. The abdomen was filled with fluid and there was leakage through the last gastro-enterostomy. Death was due to peritonitis. Further examination revealed that the lumen of the lower half of the ileum had a diameter of only 15 cm. about large enough to admit a lead pencil. Microscopic section of this part of the intestine showed that its walls and glands were perfectly normal, like those of the rest of the ileum. As the ileum approached the cecum it increased in size, so that it was normal at the ileocecal valve. Apparently the patient's pyloric obstruction was due to spasm.

SURGICAL CONSIDERATIONS OF CARCINOMATOUS METASTASES TO THE BRAIN

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In 1926, Francis Grant¹ in a review of the forty-nine cases of intracranial malignant metastases which had been seen in the service of Dr. Harvey Cushing up to that year, concluded that "Surgery, whether radical or palliative is of no ultimate benefit to these patients so far as prolongation of life is concerned." He felt justified in making this conclusion because his statistics showed that the average period of survival from hospitalization to death of persons afflicted with such lesions was three months, irrespective of whether the metastases were treated, decompressed or left alone. A further study from the same clinic in 1931 by Meagher and Eisenhardt² lent weight to his figures by showing that of the ten cases in which the primary focus lay in the breast, the longest period of survival following operation was five months, the average being six weeks.

Since the publication of these papers a case has been administered to throughout its cycle in Dr. Cushing's clinic, which has seemed to invite examination of the records subsequent to 1926 for others like it with a view to possible anchoring of the nihilistic philosophy for which there was firm foundation at the time of Grant's report. The case in question follows:

CASE 1—Removal of carcinoma of the right breast fourteen months before admission. Development six weeks before admission of headache, semistupor, choked disk, left abducent palsy, right hemiparesis. Operation with complete extirpation of a left parieto-occipital metastasis. Death two years later. Necropsy, showing no intracranial recurrence.

Past History.—Sarah MacQ., an American housewife, aged 52, was admitted to the hospital on April 21, 1930, having been referred by Dr. D. L. Lionberger of Roslindale, Mass. On Feb. 4, 1929 (fourteen months before this admission), a radical mastectomy was performed at the Forest Hills Hospital for carcinoma of the right breast, which was first noticed three months previously. The microscopic report on the tumor tissue, made by the Boston Dispensary Laboratory Department, was that the tumor was made up mostly of atypical epithelial

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¹ Grant, F. C. Concerning Intracranial Malignant Metastases. *Ann. Surg.* 84: 635-646 (Nov.) 1926.
² Meagher, R. and Eisenhardt, L. Intracranial Carcinomatous Metastases. *Ann. Surg.* 93: 132-140 (Jan.) 1931.

cells with practically no tendency toward gland formation, that it was of high malignancy and that two lymph nodes, simultaneously submitted, showed no evidence of metastasis

Complaint and Examination—At the time of admission, the patient had been developing headache, right hemiparesis and aphasia for about six weeks. Examination revealed apathy, bilateral choked disks of 3 diopters and abducens palsy, hemiparesis, hemihypesthesia, astereognosis, homonymous hemianopia and increased deep reflexes on the right. The Wassermann

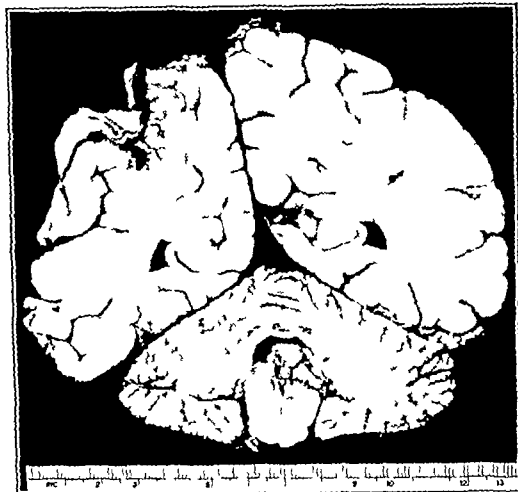


Fig 1 (case 1)—Coronal section of the brain showing the dura adherent to the old operative scar. There was no sign of recurrence, either grossly or microscopically

test of the blood was negative, as were all other laboratory tests, and roentgen examination of the skull showed nothing except displacement of the pineal body backward and to the right of the midline. Because of the suspected nature of the lesion, roentgen examination of the chest was also made, it showed no metastases

Operation—Operation was performed by Dr Cushing on March 26, 1930, via a left parietal bone-flap, a surface tumor 5 cm in diameter and surrounded by highly vascularized cortex being exposed. The tumor was circumscribed by electro-surgical measures, and was enucleated in totality. A large decompression was made and the wound closed without drainage

Grossly, the extirpated metastasis was about the size of a hen's egg, was soft and hemorrhagic and contained numerous small cystic areas. Microscopically, the tissue represented metastatic adenocarcinoma composed of large masses of epithelial cells which frequently formed definite acini. They were poorly supported by stroma, and a fair number of mitotic figures were seen. There were areas of degeneration and hemorrhage. The histology in general was that of adenocarcinoma, with metastasis from a primary source in the breast

Subsequent Course—All of the patient's neurologic symptoms subsided rapidly after operation, and she was discharged on May 11 perfectly well and alert and with a soft decompression. The patient reported to the clinic on September 13, when it was noted that some of the supraclavicular glands which had been observed during the patient's hospitalization were enlarging, and she complained of some transitory swelling of the right arm. Her decompression was however, soft and she was without neurologic signs or symptoms. She was accordingly given roentgen therapy directed toward her right axilla and supraclavicular region and was sent on her way. She reported again on April 23 1931 one year after operation, 'feeling fine' and without signs of an intracranial recurrence.

Death and Necropsy—In the spring of 1932 the patient began to fail although she still had no evidence of intracranial metastasis and on June 4 1932 she died. Autopsy performed at her home by Dr R O Good revealed extensive recurrences along the site of mastectomy, in the sternum and manubrium

in the superior mediastinum, especially on the right, and in both lungs. The mediastinal metastasis had compressed the innominate vein pushed the trachea and all other mediastinal structures to the left and completely occluded the superior vena cava, this being the cause of death. The brain was removed and sent to Dr Cushing

The Brain The entire brain was carefully sectioned coronally at intervals of 1 cm or less and no evidence of recurrence or other metastasis was visible. The site of extirpation of the old metastasis was depressed, and there was nothing visible except a puckered scar to which the overlying dura was adherent

Here, then, was a case in which removal of a known malignant metastasis was attended by distinct benefit. This woman, who had entered the hospital totally disabled by hemiplegia and aphasia, was given two more years of useful and comfortable life, and, but for a recurrence of her original lesion, might have escaped much longer, if not permanently, from her misfortune

This gratifying result inspired further inquiry, with prompt disclosure of the following case history

CASE 2—Development within four months of headache, blurred vision, choked disk, loss of memory and dulled cerebration. Removal of left parieto-occipital tumor, proving histologically to be metastatic carcinoma from the lung. Alleviation from symptoms for nearly three years. Sudden death several days after secondary operation for enucleation of an intracranial recurrence

Berth G, a Jewish widow, aged 46, was admitted to the medical service on April 6, 1925, from which she was transferred to the surgical service. For four months before admission she had increasingly severe frontal headaches, and to this symptom had more recently been added blurring of vision. Choked disk had developed, the patient had become mentally much dulled, and she had a right homonymous hemianopia. The pineal body was displaced to the right, and lumbar puncture, done in the medical service, disclosed xanthochromic fluid

Operation and Course—On April 22 a left parieto-occipital cyst was punctured, and three days later Dr Cushing extirpated, apparently completely, a large fatty cystic tumor from this region

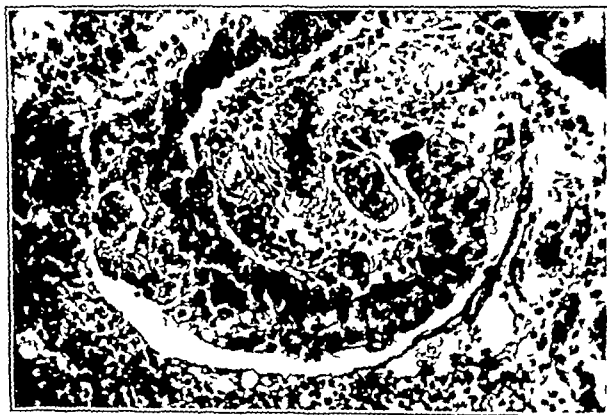


Fig 2 (case 2)—Metastatic carcinoma of the brain

Histologically the tumor was obviously carcinoma, evidently metastatic from the lung and postoperative roentgenograms of the chest revealed a rounded sharply defined mass, 5 cm in diameter, in the hilus of the left lung

Following this procedure, the condition cleared up and the patient remained perfectly well for more than two and one-half years. She then began to have signs of recurring increased intracranial pressure and was readmitted to the hospital. On Feb 28 1928 the old flap was reelevated and a huge cystic tumor larger than a tennis ball, was enucleated electrosurgi-

cally. Microscopic examination again showed metastasis from a probable bronchogenic carcinoma. The patient did well until March 5, when she was found unconscious. She died shortly afterward. Permission for autopsy was refused.

But for this patient's sudden and unfortunate collapse she might well have been expected to make a recovery as brilliant as her first one for it is recognized that bronchogenic carcinomas may lie dormant for years.

A third case, though not possessing the spectacular elements of the first two, is cited here because it represents a survival of eight months following removal of a metastasis from a carcinoma of the breast—the longest previously reported survival being five months.

CASE 3—Radical mastectomy for carcinoma of the breast, one and one-half years before admission. Headache, vomiting, aphasia, cholelith and right homonymous field defects of four months development. Operation and removal of left temporal metastasis. Recovery with survival for eight months. Death.

Marion H., an unmarried woman aged 46 was admitted to the hospital on Jan. 31, 1931, having been referred by Dr. Edward P. Starbird of Dorchester, Mass. One and one-half years before admission she had had a radical amputation of the breast because of carcinoma. For four months before admission she had been developing headache, vomiting and expressive aphasia. Examination showed in addition bilateral early choking and right homonymous field defects.

Operation and Course.—On February 7 the patient was operated on by Dr. Cushing who electrosurgically extirpated a partially cystic mass which was adherent to the dura in the left temporoparietal region. Histologically the mass proved to be metastatic carcinoma.

Following this operation the patient made a complete recovery, until shortly before Oct. 24, 1931, when she had a rapid recurrence of symptoms and died at her home.

It must be recognized that these three cases represent the only ones in a series of some fifty-four intracranial metastases, thirty-one of which have been operated on, in which the prolongation of life has been substantial. However, a careful analysis of the circumstances that in but a small proportion the metastasis was radically attacked and that the favorable results were obtained in the more recent instances, when electro-surgery had made its contribution toward clean and complete enucleation, shows that greater expectations for the future cannot be abandoned.

There are naturally certain criteria which are not to be disregarded in deciding an active surgical course. The most important of these is the question of multiplicity of metastases. Grant has well reviewed the literature concerning this possibility and there is evidently no doubt that the finding of a unique implant is rather the exception than the rule. There are, however, many examples of them on record, among which may be mentioned those of McKay,³ Lower and Watkins⁴ and Schweitzer.⁵ Grant¹ reported ten cases of single tumor among twenty verified intracranial carcinomatous metastases but surmised that the number might not have been so high had more than three of the ten come to autopsy. Two of four cases of metastasis of the lung reported by Hall and Harding⁶ were

single. Globus and Selinsky,⁷ in a discussion of one of their cases, said, "Of interest also in this case is the singularity of a metastatic lesion, as these lesions usually are multiple. This feature permits the suggestion that operative intervention, even in suspected metastatic neoplasms, is not contraindicated for the mass though metastatic, may be single and removable, on the other hand little is lost if the lesion proves to be multiple."

A careful clinical study should therefore be made to determine as accurately as possible the probability of there being but one lesion. Combined with this there should, of course, be a search for metastases elsewhere and a prognostication as to the course or recurrence of the primary focus. With these qualifications adequately evaluated the neoplasm in the brain need not be approached with too great trepidation, for it has characteristics which may modify its malignancy, as witness Cushing,⁸ who says: "It is an interesting thing that carcinoma metastatic to the brain is very apt to undergo degeneration and become cystic, evidently the brain is an unfavorable field" and Hassin⁹ in his statement that the tissues of the meninges behave rather passively toward carcinoma."

An important consideration has been reserved for the last. It may perhaps best be illustrated by the following case history.

CASE 4—Removal of carcinoma of the right breast nine years before admission. Development five years before admission of slight clumsiness of the hands and of slight difficulty in walking. Development nine months before admission of marked weakness of all extremities associated with pain and paresthesia. Operation with removal of an anteriorly placed meningioma wedged in the foramen magnum.

History.—Sarah G., a Jewish housewife, aged 50, was admitted to the hospital on Dec. 1, 1932, having been referred by Dr. George Hassin and Dr. William Boikan of Chicago. On Oct. 22, 1923 (nine years before this admission) she had been operated on by Dr. L. L. McArthur at St. Luke's Hospital for carcinoma of the right breast, a radical mastectomy having been performed.

The patient had been seen several months previously, when she gave a history of having been slightly clumsy with her hands and feet for four and one-half years. The symptoms were indefinite, however, had not interfered with the patient's doing her own work and were not superseded by anything concrete until five weeks before this time when she had suddenly become weak in all her extremities, uncomfortable, paresthesia and shooting pains had developed in the extremities and even up toward the face. Neurologic examination revealed muscular weakness without atrophy, more marked on the left, active deep reflexes more active on the left, a bilateral tendency toward ankle clonus, more marked on the left, a positive Babinski sign on the left, equivocal on the right, diminished vibration sense throughout, most marked in the left leg, a slight impairment of the sense of position, apparently somewhat diminished common sensation throughout from the clun downward, but not markedly so, and no definite sensory level. Coughing caused shooting pains in the extremities but none in the back. There was no urinary or fecal incontinence, roentgenograms of the entire spine showed no pathologic changes and lumbar puncture revealed no abnormal serologic findings though there was a complete block.

Although the patient's history up to five weeks before this examination was exceedingly indefinite, undoubtedly too little attention was paid to it. Perhaps the facts that during her life she had been subjected to a multiplicity of serious operations and that she was an extremely complaining patient served

³ McKay, H. W. Solitary Metastasis from Carcinoma of the Bladder. *Brit. J. Urol.* 2: 156-162 (June) 1930.

⁴ Lower, W. E. and Watkins, R. M. *Am. J. M. Sc.* 167: 434 (March) 1924.

⁵ Schweitzer, E. Metastatic Carcinoma in the Brain Following Primary Carcinoma of the Breast. *M. J. & Rec.* 133: 239 (March 4) 1931.

⁶ Hall, A. J. and Harding, H. E. Four Cases of Metastases in the Brain Secondary to Carcinoma of the Lung. *Clin. J.* 59: 505-510 (Oct. 22) 1930.

⁷ Globus, J. H. and Selinsky, H. Metastatic Tumors of the Brain. A Clinical Study of Twelve Cases with Necropsy. *Arch. Neurol. & Psychiat.* 17: 481-513 (April) 1927.

⁸ Cushing, Harvey. Pathologic note in case 1.

⁹ Hassin, G. B. Histopathology of Carcinoma of the Cerebral Meninges. *Arch. Neurol. & Psychiat.* 1: 705-716 (June) 1919.

to lead one to attach little importance to all but the most definite facts elicited from her. At any rate, it was felt that she was probably suffering from a recurrence of her old malignant condition, possibly in the form of a meningeal carcinomatosis.¹⁰ In the absence of a sensory level, she was given a course of roentgen treatments over the cervical and upper thoracic spine and dismissed with a poor prognosis.

On Dec 1, 1932, however, she entered the hospital with only a slight advance in her symptoms. There was still no sensory level, but the quadriplegia had become nearly complete, and, most important, she had developed what seemed like typical root pains in the distribution of the second and third cervical nerves, on the left. There was still a fluid block, though fluid findings were otherwise normal, and the patient still had bladder and rectal control.

Operation and Course—The chief complaint was pain in all the extremities, and it was for the possible surgical cure of this that the patient entered the hospital. Since she had a quadriplegia, without atrophy of the muscles of the arms or the hands, and what seemed like high cervical root pains, the laminae of the first four cervical vertebrae were removed in expectation of finding a metastatic lesion which could be partially removed, and of possibly doing a right-sided high cervical chordotomy, since the pain was most severe on the left. Instead of this, a large anteriorly placed meningioma was found, possibly the size of the two phalanges of the index finger. It was wedged in the foramen magnum, inside the dura, with possibly two thirds of its bulk in the cervical canal and the other one third in the posterior fossa. The tumor was removed piecemeal in its entirety with subsequent improvement of all symptoms.

Meagher and Eisenhardt² cited a similar case in which a suspected carcinomatous metastasis proved to be meningioma on roentgen examination and subsequent operative verification. In their case, however, the diagnosis could be made before operation. The case herein detailed indicates even more poignantly that no person must be denied the opportunity to gamble on his chance merely because all the arrows seem to point in the direction of fatality.

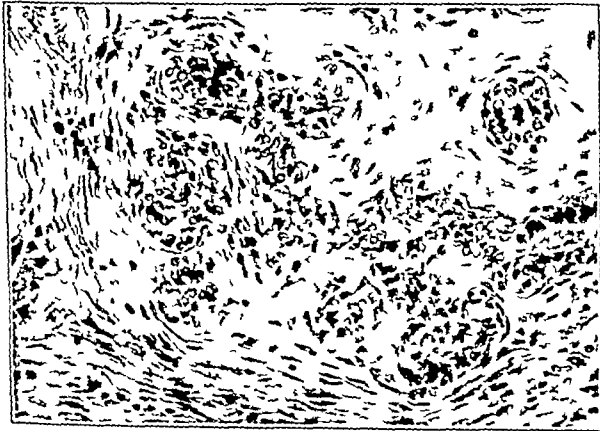


Fig 3 (case 4)—Primary carcinoma of the breast

Perhaps the ability to report so few cases does not justify the drawing of definite conclusions. One cannot escape feeling however that they may help to modify a fatalistic concept for which there has been until but recently all too complete confirmation. The fistful universality of the first successful removal of a tumor of the brain has not yet been celebrated and one must not abandon any one class as hopeless without a struggle.

¹⁰ Lachsmeningitis carcinomatosa. A review of this condition is given in H2 in (this issue).

CONCLUSIONS

1 Three cases of carcinomatous metastasis to the brain are reported in which the periods of survival following intracranial operation are longer than in previously reported cases.

2 These periods of survival compare favorably with the results obtained from operations on relatively benign primary tumors of the brain.

3 One case of suspected carcinomatous metastasis to the cervical cord is reported, in which operation dis-

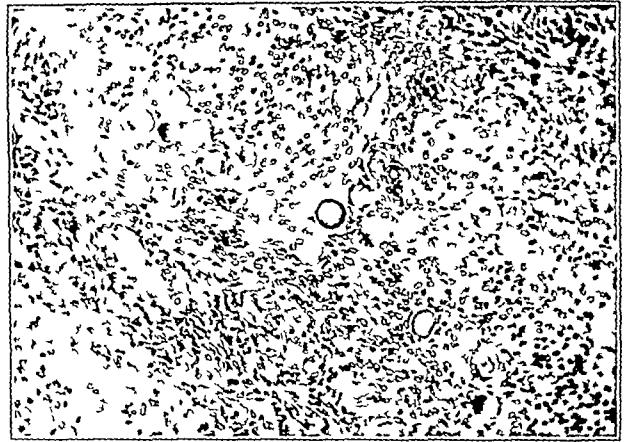


Fig 4 (case 4)—High cervical psammomatous meningioma

closed and made possible the removal of a meningioma, with recovery of the patient.

4 It is suggested that operation on suspected malignant metastases to the brain, provided the general condition of the patient warrants it and that the cerebral lesion is apparently single, be undertaken for the following reasons:

(a) It may be possible to extirpate the metastasis, with great relief to the patient and with prolongation of his life expectancy.

(b) If the lesion cannot be removed, at least palliative decompression can be performed for the relief of distress.

(c) Occasionally a gratifying surprise may be encountered in the form of a benign tumor, and no person should be refused this possibility.

30 North Michigan Avenue

ABSTRACT OF DISCUSSION

DR GEORGE W. HALL, Chicago: There are one or two things I would like to speak about from the standpoint of the neurologist. Sometimes the burden of proof is on the neurologist in making the diagnosis. Not many months ago an internist, myself and another neurologist were studying a case which we agreed was one of a brain tumor of benign origin. However autopsy showed that the patient had a primary carcinoma in the colon which had not been discovered during his illness. Dr Oldberg has brought out the fact that a benign tumor may be found instead of a metastatic tumor. I have seen more than one case in which a breast had been removed and a tumor of the brain developed in after years which demanded a great deal of thought as to the relation of one to the other.

DR WINCHELL MCK CRAIG, Rochester, Minn.: The question of carcinomatous metastases to the brain which Dr Oldberg has just emphasized is of extreme interest especially to those doing neurosurgery. It has been repeatedly demonstrated at the operating table that the pathologic diagnosis of an intracranial lesion cannot be made until tissue has been removed and

examined. In spite of the evidence in favor of a metastatic lesion, a totally different type of pathologic condition is often found, and even though the lesion proves to be metastatic, palliative relief may follow a decompression. Other lesions of the central nervous system, especially those of the spinal cord, in which there is evidence of metastatic malignancy, should be explored before definite pathologic diagnosis is made, because here again the lesion may be benign, and even if it proves to be malignant, the decompression may afford palliation. Several years ago I had under my care an elderly woman in whose case there had been made a diagnosis of carcinoma of the stomach with metastasis to the spine. This diagnosis had been made elsewhere, and when I examined her she was too sick for complete gastro-intestinal studies. Examination revealed a sensory level, subarachnoid block of the cerebrospinal fluid, and paralysis, and the most significant symptom was pain in the back and legs. At operation, an intrameningeal neurofibroma was found and removed, following which the patient regained her health and the gastro-intestinal symptoms disappeared. The diagnosis of malignant metastases to the central nervous system should be made only after pathologic verification.

DR. GEORGE B. HASSIN, Chicago. I wish to say a few words regarding the possible indications for operations for malignancy. I made a pathologic study of twenty-five cases of carcinoma of the brain that metastasized from various organs, and I don't recall one instance in which the carcinoma was presented by a single nodule. As a rule, the metastases are multiple, their amount probably depending on the duration of the carcinoma of the brain. If a person with carcinoma of the brain has the metastasis operated on at once, the surgeon may find only one focus, but in the course of time one nodule in the brain may give rise to a hundred or more nodules. Such cases are absolutely hopeless and an operation is useless. It may occur that even early cases diagnosed as carcinomatous involvement of the brain are inoperable, as it is not possible to say whether the patient has only a focus in the brain or also an additional carcinomatous meningitis. Such a condition is likewise absolutely hopeless. As to the carcinomas of the spinal cord, the metastases are not in the parenchyma. I have never heard of a carcinoma localizing in the spinal cord, but I saw instances of carcinoma invading the meninges and producing so-called meningitis carcinomatosa. The tumor is confined to the meninges sparing the cord or brain, or it invades the spinal ganglions and roots giving in early stages the picture of so-called neuralgia. When the real condition is diagnosed an operation is useless. Another type of metastasis occurs not in the meninges but in the epidural space. Carcinoma may metastasize in the epidural space in the form of a single nodule which can be removed. Operation should be done in such cases and for this reason I consider Dr. Oldberg's paper of great importance. Dr. Oldberg showed that even some cases of malignant involvement of the central nervous system may be benefited by surgical procedures provided the diagnosis is made early and a trained neurosurgeon is taking care of the case.

The Tiger Mosquito—The chief mosquito vector, or carrier, of yellow fever virus is generally called *Stegomyia fasciata* by British writers, and *Aedes aegypti* by Americans. It has other names, both Latin and English, and in tropical Asia and elsewhere is widely known as the Tiger Mosquito, from its black and white striped body and legs. Some writers describe it as essentially a town dweller, but I have often been bitten by it in villages, and even in the depths of high forest. Until quite recently, *S. fasciata* was believed to be the only vector of yellow fever, but research has added to the list a wide variety of mosquitoes, eight African and two American species, according to one authority, thirteen species, in a report published a few months later, "many kinds of common domestic mosquitoes," in a paper published in 1932. Until recently, too, it was believed that *S. fasciata* would fly but a few score yards from its birthplace but now it has been observed to fly long distances ranging from 400 to 1000 meters. The distribution of *S. fasciata* is astonishingly wide, for it is found abundantly throughout the tropics everywhere—Still John. The Significance of Yellow Fever, *J. Roy. Army M. Corps* 61 268 (Oct) 1933.

CHRONIC ULCERATIVE COLITIS

A DISFASI OF SYSTEMIC ORIGIN

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AND

J. ARNOLD BARGEN, MD

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This paper consists in part of a brief review of what has been learned about the bacteriology of chronic ulcerative colitis in the last ten years and will make the contribution of correlating the living and the post-mortem pathology. The first part deals with bacteriology, the second with the proctoscopic picture, and the third with the microscopic changes in tissue.

BACTERIOLOGY

We have learned to recognize chronic ulcerative colitis as a clinical entity and to recognize a micro-organism which we believe plays a part in causation of most cases. The results of the activities of this organism have been seen in the bowel of man, and the organism can be recognized by its appearance, its cultural characteristics and its biologic reactions. It has been dealt with in the laboratory for almost a decade.



Fig 1—The earliest microscopic lesion of chronic ulcerative colitis

We believe its connection with chronic ulcerative colitis has been established by fulfillment of those requirements accepted by bacteriologists generally.

Eight hundred and fifteen strains of this organism have been isolated from 1,100 patients with chronic ulcerative colitis, and approximately 500 of these strains have been injected into 1,000 rabbits. Lesions resembling those seen in the colon of man have followed intravenous injection of 65 per cent of the animals. The organism has been isolated from the blood stream of eight patients acutely ill with chronic ulcerative colitis.

This diplostreptococcus has been isolated from periapical dental abscesses of 148 patients with chronic ulcerative colitis and has been injected intravenously into animals. The typical lesions were found in the colons of 75 per cent of these animals. The organism has been found in tonsils of 100 patients with chronic

From the Section on Proctology (Dr. Buie) and the Division of Medicine (Dr. Borgen) the Mayo Clinic.
Read before the Section on Gastro-Enterology and Proctology at the Eighty Fourth Annual Session of the American Medical Association Milwaukee June 14 1933.

ulcerative colitis and has been injected into animals with results identical to those secured after injection of organisms from periapical dental abscesses

In 1932, of the total number of patients who underwent investigation in the Mayo Clinic because of diarrhea and who gave no evidence of chronic ulcerative colitis on proctoscopic or roentgenographic examination, the organism was found in only ten. Two of these ten patients returned at a later date, and early

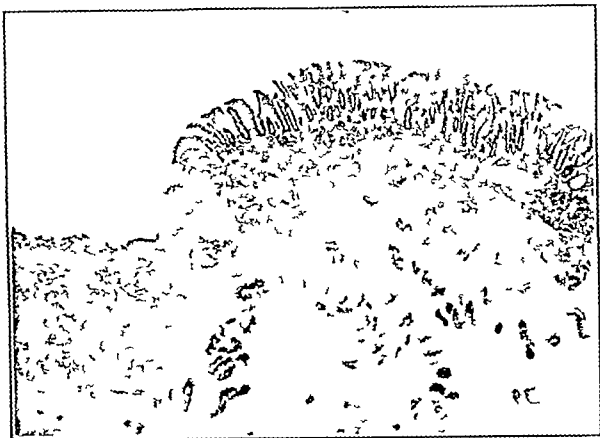


Fig 2—Occlusion of the small blood vessels in the wall of the colon

signs of chronic ulcerative colitis were discovered on proctoscopic examination

During the same period, forty-eight other patients with diarrhea of unknown cause were referred by various clinicians working independently of one another, with specific requests that the diplococcus be searched for, and in no instance was the organism found

Method of Verification—Numerous methods of verification of the bacteriologic observations have been used consistently. The clinician, the proctologist and the bacteriologist have worked independently. The proctologist, without the knowledge of the bacteriologist, has at various times made cultures from normal bowels and from other sources than the bowel, in an attempt to recover the diplostreptococcus or to demonstrate that it could not be recovered. During one period, swabbings were taken from 100 normal bowels, cultures were made and the diplostreptococcus of chronic ulcerative colitis was isolated in only four instances. In ten cases the skin around the anal margins was swabbed and cultures were made, organisms were not found in any of the cultures

From 534 patients who did not have colonic disease cultures were taken from the throat and nose, and streptococci from these cultures were injected into rabbits¹. Lesions were found in the colons of only 0.8 per cent of the animals that received injections. Cultures of staphylococci were obtained from the noses and throats of twenty patients with chronic ulcerative colitis and were injected into rabbits without producing colonic lesions

Specimens were removed proctoscopically from the colons of fifty-six patients with chronic ulcerative colitis and were cultured by all generally accepted methods for growing dysentery bacilli and in no instance were dysentery bacilli found. Specimens were removed proctoscopically from fifteen patients with

chronic ulcerative colitis, search was made for acid-fast bacilli, and material was injected into guinea-pigs without the production of tuberculosis in a single instance

Cook² obtained cultures of the diplostreptococcus from periapical abscesses of fifteen patients with chronic ulcerative colitis. He devitalized the teeth of fifteen dogs and filled the cavities with material obtained from these cultures. In seven of the fifteen dogs, chronic ulcerative colitis developed in between eight and twelve months after the inoculation. This was proved by proctoscopic and postmortem examinations. The same method was followed with fifteen patients who had gastric ulcer, iritis, arthritis, endocarditis, cholecystitis and myositis, in no instance did colonic lesions appear, although the animals were observed for two years

PROCTOSCOPIC CHARACTERISTICS

During the ten years previous to Jan 1, 1933, 1,348 different patients suffering with chronic ulcerative colitis were examined proctoscopically. Practically all these patients were subjected to proctoscopy more than once. During the same time patients with amebic dysentery, bacillary dysentery, tuberculous colitis, infestation with *Balantidium coli*, benign strictures, and other pathologic conditions of the colon, some indeterminate, were examined and the appearance was compared with that of those who had chronic ulcerative colitis. At first we were undecided as to whether we were encountering different diseases or various manifestations or stages of the same disease. However, we soon learned to distinguish chronic ulcerative colitis from other pathologic conditions of the colon and to distinguish various stages during its period of activity and quiescence. Its characteristics always gave us the impression that it was a disorder of systemic origin and in recent years this has become more apparent. Almost invariably, either in the history or in our search

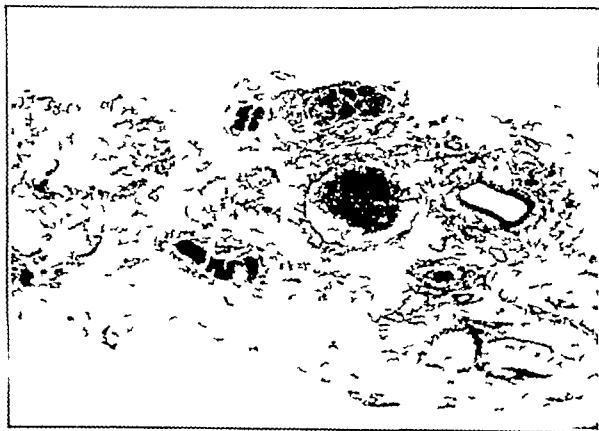


Fig 3—Multiple thrombi of the larger blood vessels of the colonic wall

for foci, we found a clue as to the inception of the disease

The pathologic process consistently begins as a diffuse inflammatory reaction of the wall of the bowel. Usually the lower portion of the colon is first affected. This is a characteristic of the first stage of the active period. The second stage begins with the appearance of edema throughout the involved area. Soon, as the

¹ Rochow, F. C. Focal Infection and Fleeting Localization. *Internat. Clin.* 2: 9-64 (June) 1930

² Cook, T. J. Focal Infection of the Teeth and Fleeting Localization in the Experimental Production of Ulcerative Colitis. *J. Am. Dent. A.* 18: 2290-2301 (Dec.) 1931

third stage, miliary abscesses present themselves under the mucous membrane, and with rupture of these abscesses the fourth stage manifests itself by miliary ulcers. The period of quiescence is one of gradual recession, and with it the active pathologic process subsides. The inflammatory changes disappear either partly or entirely, the ulcers heal, and characteristic pocklike scars remain.



Fig 4—A small blood vessel packed with erythrocytes

MICROSCOPIC CHARACTERISTICS

Humphrey, working as a fellow in the Section on Pathologic Anatomy of the Mayo Clinic, first called attention to certain microscopic changes in the wall of the bowel in cases of chronic ulcerative colitis. He made a critical study of the pathologic changes in a case of chronic ulcerative colitis, and he noted particularly emboli and infarcts in the wall of the colon, with dissolution of the mucosa immediately adjacent.

Following this observation, the colons of fifty patients who died of chronic ulcerative colitis were studied. In eight of these fifty cases, changes were seen in various parts of the colon, illustrating the four stages observed at proctoscopy. These patients died of an acutely progressing, fulminating disease, or of perforation and peritonitis.

It is readily understood that not all patients who die of chronic ulcerative colitis, and who come to necropsy, exhibit the pathologic changes in the colon which, at proctoscopic examination, can be recognized as stages in the development of the disease. For instance, proctoscopic examination has been made of patients in the second and third stages of the disease, and a week later, in spite of treatment, the mucosa has been so nearly destroyed that no characteristics of the disease remained. The mucosa had seemingly been torn to shreds. On the other hand, in some cases of the fulminating type of the disease the characteristic ulcers could not be recognized, yet, from the clinical standpoint, the diagnosis of advanced chronic ulcerative

colitis was made, and when proctoscopy was performed, after a period of treatment, the characteristic scars were seen in the healed mucosa.

The earliest microscopic changes recognizable in the wall of the colon are small lesions associated with edema and hemorrhage. These are often of roughly pyramidal shape (fig 1). The capillaries in this region are dilated and packed with erythrocytes. Some of the erythrocytes seem to have spread throughout the adjacent tissue, giving the appearance of a red infarct. At the bases of these regions, deep in the mucosa and submucosa, capillary vessels are occluded by hyaline masses (fig 2). Tracing this further, it is found that the capillary originates from some occluded vessel deeper in the tissue, and finally distinct branches of blood vessels can be made out, which are filled with homogeneous thrombi (fig 3). In some regions the hyaline mass does not occlude the entire lumen and the spaces existing fill with erythrocytes, suggesting the canalization of a thrombus (fig 4). Because of the integrity and preservation of the limiting membrane of the surface of the mucosa, the impression is that the condition is of hematogenic origin and that it is not due to some agent originally present in the lumen of the bowel but which has disappeared.

The relation of these hemorrhagic lesions to the occluded vessels is striking, for disseminated among the myriads of such lesions there are places where the tiny blood vessels are not blocked and where there is no



Fig 5—Marked swelling of the wall of the colon in and near the mucous membrane

evidence of any pathologic change in the mucosa that apparently is nurtured by that particular vessel. The analogy between this and the early proctoscopic picture is at once apparent (fig 1).

The edema so characteristic of the second stage of the sigmoidoscopic picture is only rarely seen, because the patient does not come to the proctologist until after that stage has subsided. It is perhaps transient and not readily maintained in fixed tissues. However, it has

en seen and is depicted in figure 5. One can readily perceive of it as a rapidly progressive change. In the third stage, innumerable diplostreptococci are served in the wall of the colon. In some cases they are isolated from the blood stream, and it is readily understood how the infected infarcts result in the min-



Fig 6—Innumerable diplococci deep in the submucosa of the colon



Fig 7—An early mucosal and submucosal abscess with normal mucous membrane at the edge of the field

ute abscesses (fig 6). In this stage then there appear roughly pyramidal regions of necrosis surrounded by hemorrhagic zones. In the necrotic center lie many polymorphonuclear cells in a mass of disintegrating tissue, and the limiting membrane is covered with exu-

date (fig 7). Close examination, however, reveals relatively normal mucosa at each side of this abscess. It should be noted here that these tiny abscesses have no relation to the lymphoid follicles, and intact follicles are found in spaces between these lesions of necrosis. No lymphoid tissue is seen in the immediate region of the abscesses or ulcers. These minute, necrotic areas, in many places are so confluent that large sections of colon are involved (fig 8). However, in many places the stages are clearly discernible and can be traced readily.

The formation of abscesses has just been described, and since nothing retains the minute abscesses except the thin inner membrane, the slightest trauma will uncover a tiny bleeding or purulent point. A microscopic section shows how very close to the lumen of the bowel these abscesses lie, and so it can easily be understood why mere touch of the membrane will result in ulcer.

The histologic appearance of the remaining layers of the colonic wall is dependent on the acuteness of the process at any given point. The thickness of the wall



Fig 8—A large section of necrotic colonic wall

noted grossly is very striking microscopically and through it there may be diffuse infiltration of lymphocytes and plasma cells, while in the regions immediately adjacent to this acute process polymorphonuclear cells are more apparent. Among the more acute processes there also appear evidences of healing. Sometimes the borders of ulcers are deeply undermined and there is little leukocytic reaction. Regenerating mucosal cells may be seen in more advanced cases of healing and this is probably the basis of the pocklike scar which so constantly is seen after healing occurs.

SUMMARY

After nearly ten years the part played by bacteria in the etiology of chronic ulcerative colitis apparently has been established. In this paper the correlation between the proctoscopic picture and the microscopic changes in tissue is pointed out.

ABSTRACT OF DISCUSSION

DR HORACE W. SOLER, St. Louis. The proctoscopic picture of ulcerative colitis is absolutely typical. I have verified the description of the lesions as presented by Drs. Buie and Borgen many times. The early stage of general edema of the mucosa is followed by the formation of the military abscesses and is succeeded rapidly by the military ulcers, finally culminat-

ing in the pocklike scars. I see another later stage frequently viz., a thickening of the membrane in patches with the formation of polyps with broad bases. This stage however may be considered a complication of ulcerative colitis rather than a definite stage of the disease. Amebic dysentery presents a characteristic picture. Lynch said it looked like smallpox of the mucosa. A smear readily discloses the presence of amebae. Tuberculous ulcers are larger distinctly characteristic ulcers with normal mucosa separating them. I have long advocated local treatment of the rectal lesions in ulcerative colitis. Many patients who are clinically well carry these lesions. The *Bergey* diplococcus appears to burrow in the submucosa, a fact that explains the chronicity and the frequent exacerbations observed in this disease. Patients with the acute fulminating form usually succumb, but a few get well. *Bergey's* serum is indicated in cases of this character. *Bergey's* serum has given good results in many subacute and chronic cases. Ileostomy should never be undertaken in the acute stage but should be reserved for the patient who survives and whose colon is irremediably crippled. I am glad to hear Dr. Lahey say that he removes the ileum from the cecum in performing this operation. I have seen fatal involvement of the ileum in patients in whom a simple ileostomy without detaching it from the cecum had been performed.

DR BENJAMIN JABLON, New York. Possibly my experience in a case observed over a period of eleven years may shed some light on the difference of opinion that has been voiced here. The patient came under observation in 1922 with a history of a chronic ulcerative colitis lasting over seven years, with hemorrhage, dysentery and ten or fifteen bowel movements a day. He was observed for three months but nothing could be done to control the condition or to establish the etiology. Multiple bacteriologic examinations were negative. The flora isolated never seemed to show any definite relationship or identity as far as the disease present was concerned. Three months after observation I decided to take advantage of some of the experience I had had during the war. By repeated cultures of material obtained on proctoscopic examination on enrichment medium which was designated as liver peptone medium and by subculturing every twenty-four hours in this medium from twenty-four to thirty-six hours a non-hemolytic diplostreptococcus was obtained which when administered in vaccine form controlled all the symptoms. The patient was a boy aged 17 at the time and retarded in growth. His growth was similar to that of a boy of 10. There were no secondary skin reactions or hematic effusions in the joints of the wrist and though attempts were made to control the conditions with every known specific it was impossible to produce any effect. This vaccine of the organism was given him and the boy is perfectly well today. He had a number of relapses. Each time he had a relapse diplostreptococcus was isolated from the stool. Each time he recovered and improved the diplostreptococcus disappeared.

DR E. JAY CLEMONS, Los Angeles. When Dr. Buie first presented this subject I became interested especially in the first stage of the disease. I organized the service of the Los Angeles County General Hospital so that every suspicious case would be put in my service for proctoscopic examination. It took four years of very careful work to find the initial lesion of this disease. I wish to voice the sentiment of Dr. Edward G. Martin of Detroit that, provided the Mayo Clinic never accomplishes anything else the discovery of the etiology of chronic ulcerative colitis had made its efforts not in vain.

DR L. A. BUIE, Rochester, Minn. In the work I am about to comment on the clinician, the proctologist and the bacteriologist performed their tasks independently. In cultures made from 100 normal bowels diplococci were found in only four instances. The bacteriologists did not know the source of the cultures. Cultures were made from the nose and throat in 543 patients who did not have chronic ulcerative colitis. Streptococci isolated were injected into rabbits and lesions developed in only 0.8 per cent of the rabbits. Staphylococci obtained in cultures from the nose and throat in twenty patients with chronic ulcerative colitis and injected into rabbits produced no lesions in the colon. From 1,200 patients 1,816 strains of the organism which we believe to be of etiologic significance

were isolated and 500 strains were injected intravenously into 1,000 rabbits. Characteristic colonic lesions developed in 65 per cent of the rabbits. The organism was isolated from the blood stream of eight patients. The organism was isolated from peripical dental abscesses of 148 patients and colonic lesions appeared in 75 per cent of the animals given intravenous injections. The organism was isolated from the tonsils of 100 patients and typical lesions appeared low in the colon of 75 per cent of the rabbits into which the organisms were injected. From forty-eight patients with diarrhea no diplococci were isolated. Specimens were removed from fifty-six patients and were cultured for dysentery bacilli with negative results. Specimens were removed from fifteen patients and cultures made for bacilli of tuberculosis gave negative results. Cook took cultures from teeth of men with chronic ulcerative colitis injected the organisms thus obtained into the teeth of dogs and produced ulcerative colitis in seven out of fifteen cases. Similar experiments with patients having arthritis, endocarditis, cholecystitis, iritis or endocystitis all gave negative results as far as the production of chronic ulcerative colitis in animals was concerned. Ileostomy was formerly done with a proportion of deaths that was fairly high but in 1932 we had 110 cases of chronic ulcerative colitis and only one ileostomy. Patients are not now dying in as large proportions as before.

PRODUCTION OF ENDOMETRIAL GROWTH IN CASTRATED WOMEN

THE MINIMUM DOSAGE OF THEELIN THAT IS REQUIRED

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AND

W. D. COLLIER, PH.D., M.D.
ST. LOUIS

Apes and Old World monkeys menstruate in a cyclic manner just as normal sexually mature women do. Edgar Allen,¹ Harvard, Corner Hartman Morrell and others using castrated monkeys were able to produce endometrial growth followed by uterine bleeding after cessation of injections of theelin.

It was desirable to know what effect theelin would have on castrated women.

In a previous article we² described the effect of theelin injections on castrated young women whose uteri were intact. Endometrial hyperplasia was produced, as shown by histologic examination of tissue obtained by curettage before, during and at the end of the experiment. Bleeding from the uterus occurred both during treatment and within three to five days following cessation of injections. Activity in the breasts was characterized by a sensation of fullness, actual enlargement, tingling in the gland tissue and erection of the nipples. The subjective symptoms that follow castration disappeared and libido was increased in four of five patients. Large dosages of theelin were used.

From the Departments of Internal Medicine and Pathology, St. Louis University School of Medicine.

Because of lack of space this article has been abbreviated in THE JOURNAL by the omission of the case reports. The complete article appears in the authors' reprints.

Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Allen, Edgar. The Menstrual Cycle of the Monkey Macacus Rhesus. Observations on Normal Animals, the Effects of Removal of the Ovaries and the Effects of Injections of Ovarian and Placental Extracts into the Spayed Animals, contributions to Embryology, number 98. Carnegie Institution of Washington, Pub. 380, 19, 1-44 (Aug.) 1927. Endocrine Activity of the Ovary, J. A. M. A., 97, 1189 (Oct. 24) 1931.

2. Werner, A. A. and Collier, W. D. Effect of Theelin Injections on the Castrated Woman. Proc. Soc. Exper. Biol. & Med. 29, 1142, 1143 (June) 1932. J. A. M. A. 100, 633-640 (March 4) 1933.

With the accomplishment of these results by the use of theelin in castrated women the next question immediately to present itself was What is the least number of rat units² that will duplicate the results obtained in the first experiment?

THE PATIENTS USED

With this idea in view, a second experiment was started, Dec 4, 1932, in which eight white castrated women whose uteri were intact cooperated. Their ages ranged from 22 to 36. Patients 3, 5 and 7 had been used in the previous experiment, but seven and one-half months had elapsed since treatment, and in each instance one of these patients was paired with another who had not received treatment before.

Amenorrhea was complete in all these patients since castration except for the postoperative menstruation that usually follows complete castration within two to five days. Five of these women had postoperative menstruation beginning within one to three days and lasting from three to seven days. Two of the patients

oughly for syphilis for about two years in municipal and university clinics just previous to receiving the theelin treatment.

EXPERIMENTAL PROCEDURE

Four curettements were done on each patient, a total of thirty-two in all. The first curettage was done just before the first injection of theelin was given and then at the end of each twenty-eight day period for three months. The cervixes in the new patients, 1, 2, 4, 6 and 8, were pale pink and firm and the cervical canals contracted. The cervixes of patients 3, 5 and 7, who were used in the previous experiment, had not reverted to the degree of atrophy which they showed originally. The cervix of patient 3 was moderately soft and full, the cervix of patient 5 was pale and contracted (it was this patient who needed a general anesthetic before dilation could be done in the first experiment). The cervix of patient 7 was not as atrophic as at the beginning of the first experiment, but the canal, although moderately contracted, dilated without much difficulty.

TABLE 1—Observations in Eight Castrated Women Before Theelin Treatment

Patient	Age Years	Age at Castration Years	Time Elapsed Since Castration	Bleeding Immediately Following Castration	Amenorrhea Since Castration	Decreased or Absent Vaginal Mucous Discharge Since Operation	Atrophic Endo- metrium Before Injections	Atrophy of Breasts	Subjective Symptoms of Castration	Decreased Libido
1	27	26	4 mos	Three days after operation for 3 days	Yes	Yes	Yes* moderate atrophy	Yes	Yes 18	Yes
2	24 5	16	8 5 yrs	One day after operation for 7 days	Yes	Yes	Yes	Yes	Yes 19	Yes
3	31	30	17 5 mos	Bled first day after for 2 days	Yes	Yes	Yes	Yes	Yes 9	Yes
4	22	22	3 mos	Two days after operation for 6 days	Yes	Yes	No*	Yes	Yes 10	Yes
5	31	24	6 yrs 5 mos	Bled week before none since	Yes	Yes	Yes*	Yes	Yes 14	Yes
6	36	32	4 yrs 4 mos	Menstruated day of operation none since	Yes	Yes	Yes	Yes	Yes 11	Yes
7	23	21	2 yrs 2 mos	Bled second day for 3 days	Yes	Yes	Yes*	Yes	Yes 9	Yes
8	34	33	11 mos	Bled before operation	Yes	Yes	Yes	Yes	Yes 12	Yes

* Details in report

menstruated within a week before and one on the day of the ovariectomy, and they did not bleed after operation as did the others.

This postoperative menstruation is mentioned here because, in some instances at least, it is comparable to the bleeding that occurred in the theelin-injected women used in this and the first experiment following the cessation of injections. Endometrial stimulation and growth of varying degree had occurred and the removal of the ovaries withdrew that-needed-something which our experiments seem to indicate may be theelin.

All patients had atrophy of the breasts and had markedly decreased or absent vaginal mucous discharge depending on the time that had elapsed since castration. All complained of the symptoms that accompany castration.

The physical examination of each patient did not reveal any abnormality. All laboratory tests were normal except the Kahn test of patient 2 which was 4 plus. This patient had been treated consistently and thor-

INJECTIONS OF THEELIN

Theelin was the estrogenic substance used in all patients.⁴ As in the previous experiment, all injections were made into the upper gluteal region about 3 inches below the iliac crest and about 1 inch deep, on alternate sides each time.

Following the initial curettement patient 1 was given 4 cc of theelin or 200 rat units daily. It was the intention to give patients 1 and 2 who had not been used before the same dosage as was used in the original experiment to act as a control. Patient 1 was rather apprehensive and sensitive for the first six weeks of the experiment so it was decided not to increase her dosage of theelin but to continue her on 4 cc daily for the ninety-one day period. As the treatment progressed this patient became very calm and cooperative and was no further cause for worry. Patient 2 was given 4 cc or 200 rat units for twenty-eight days, 6 cc or 300 rat units the second twenty-eight day period and 8 cc, or 400 rat units the last thirty-five days.

¹ The Davis Habit modification of the Allen Davis rat unit in Green's Litter as applied by Parke Davis & Co. was used in the experiment.

⁴ Parke Davis & Co. applied the theelin used in this work.

Patients 3 and 4 were given 4 cc., or 200 rat units, every other day. Patients 5 and 6 received 2 cc., or 100 rat units, daily, and patients 7 and 8 were given 2 cc., or 100 rat units, every other day. All patients were treated for a period of thirteen weeks, or ninety-one days.

EFFECT OF THEELIN ON THE BREASTS

All patients experienced activity in the breasts, characterized by a sensation of fullness and actual enlargement, tingling in the gland tree, erection of the nipples, increased pigmentation of the nipple area in three and aching and soreness of the breasts, especially when uterine bleeding occurred or at other times when they had symptoms and signs, such as they described as "a feeling that they would menstruate."

This was first noticed in patient 1 on the twenty-sixth day, patient 2 on the fourth day, patient 3 on the sixteenth day (in the previous experiment on the tenth day), patients 4 and 5 on the seventh day (in the previous experiment patient 5 noticed this on the fourth day), patient 6 on the tenth day, patient 7 on the twenty-fifth day (in the previous experiment on the seventh day), and patient 8 on the sixth day. These breast changes were constant and increasingly prominent throughout treatment after their first appearance.

EFFECT OF THEELIN ON THE UTERUS

Patients 1, 2, 6 and 8 had marked atrophy of the cervix and uterus, as evidenced by the size and pale pink color of the cervix. The cervix of patient 4, although castrated only three months, was about of normal size, but pale and hard, and the canal was tightly contracted. Patients 3, 5 and 7, who were used in the first experiment and who at that time had markedly atrophic cervixes, did not have a reversion to the previous degree of atrophy, although seven and a

half months had elapsed since the last treatment. Their cervixes were pale, having lost the deep purplish-red hue that they had at the end of experiment 1. The cervix in each was about normal in size, moderately soft and dilated without difficulty. The mucous flow was greatly decreased or absent in all at the beginning of this experiment.

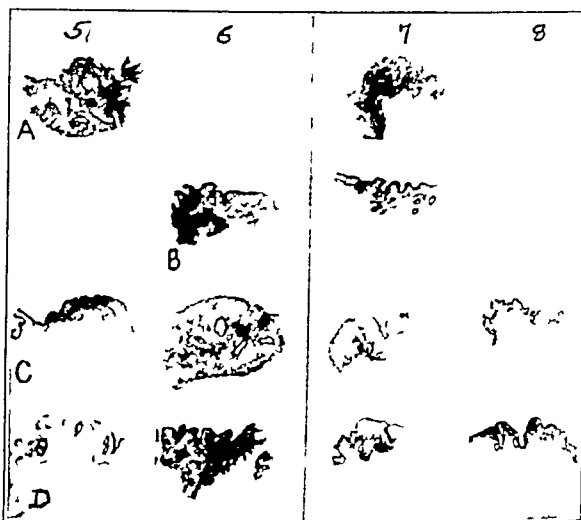


Fig. 2—Endometrium of patients 5, 6, 7 and 8. A, before treatment; B, after twenty-eight days of theelin administration; C, after fifty-six days of treatment; D, at the end of eighty-four days.

metriums which developed greatly on treatment, did not have a reversion to the previous state of atrophy at the beginning of the second experiment. Patient 3, who was also used in experiment 1, showed marked atrophy of the endometrium at the beginning of both experiments.

Uterine activity characterized by intermittent cramps, pelvic fullness, a bearing-down sensation and increased mucous flow was first noticed in patient 1 on the fifth day, patients 2 and 3 on the tenth day, patient 4 on the seventh day, patient 5 on the ninth day, patient 6 on the eighth day, patient 7 on the thirteenth day, and patient 8 on the sixth day. Congestion of the cervix, characterized by a purplish-red enlargement and increased vascularity, was noted in all at the end of the twenty-eighth day, at which time the first curettage following the onset of treatment was done. These objective cervical changes occurred earlier than at twenty-eight days as evidenced by the earlier uterine activity as given, but for obvious reasons they were not checked.

Uterine bleeding occurred in patients 1, 3, 4, 6, 7 and 8 while on treatment and in patient 8 after cessation of treatment. There were fifteen periods of uterine bleeding in six of these patients. Except in four instances, all bleeding periods were accompanied by the symptoms that usually accompany menstruation in most women. These exceptions were in patient 1, who bled on the eighty-ninth day, and in patients 6 and 7 who were on small doses of theelin and who did have the subjective symptoms of menstruation with later bleeding. Patient 1 had uterine bleeding once while on treatment. This occurred the sixth day after the onset of treatment. This was moderately heavy and lasted one day. There was marked endometrial growth in this patient as a result of treatment.

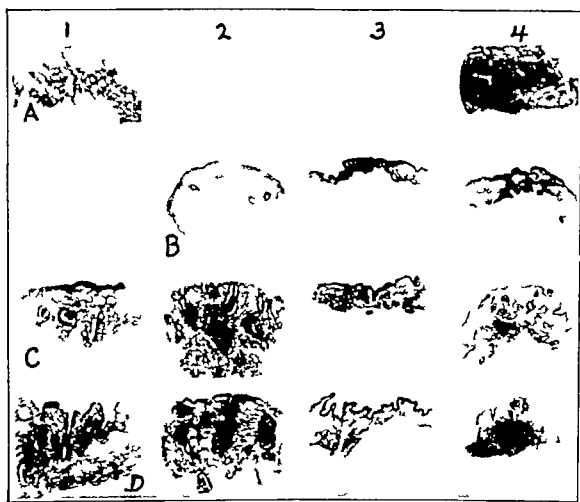


Fig. 1—Endometrium of patients 1, 2, 3 and 4. A, before treatment; B, after twenty-eight days of theelin administration; C, after fifty-six days of treatment; D, at the end of eighty-four days.

half months had elapsed since the last treatment. Their cervixes were pale, having lost the deep purplish-red hue that they had at the end of experiment 1. The cervix in each was about normal in size, moderately soft and dilated without difficulty. The mucous flow was greatly decreased or absent in all at the beginning of this experiment.

Patient 2 did not bleed on treatment but had marked endometrial hyperplasia and a feeling that she would menstruate several times

Patient 3 had uterine bleeding four times while on treatment (This patient bled four times during the first experiment, which lasted ninety-three days, making a total of eight experimental bleedings during the two series of treatment) The first bleeding began seventeen days after the preliminary curettage and onset of treatment It was moderately heavy in amount and lasted one day The second bleeding began on the thirty-third day, five days following a curettage It was moderate in amount and lasted one day The third bleeding began on the seventy-sixth day, which was twenty days after the last curettage It was moderately heavy in amount and lasted one day The fourth bleeding began on the eighty-ninth day, five days following the last curettage, was moderate in amount and lasted one day All these periods of uterine bleeding were accompanied by the usual pelvic and breast signs and symptoms of normal menstruation and the patient stated that "she felt as she formerly did during menstruation before castration" Moderate endometrial growth was produced by treatment

Patient 4 had uterine bleeding on the eighty-ninth day of treatment, five days following the last curettage It lasted one day and was rather light in amount A cotton-tipped applicator introduced into the cervical canal was soiled with blood She did not have the feeling that she was menstruating This patient had been castrated three months and retained quite a bit of endometrial growth The first curettage apparently removed this and she later developed marked typical theelin hyperplasia

Patient 5 did not bleed while on treatment or afterward, but she frequently felt as though she would menstruate (This patient was treated in the original experiment as patient 4 and at that time bled once while on treatment and afterward) She had quite a bit of residual endometrium from the first experiment which was removed by the first curettage after which she developed endometrial growth commensurate with the amount of theelin given

Patient 6 had uterine bleeding three times while on treatment The first bleeding began on the ninth day following the first curettage and onset of treatment It was rather light in amount and lasted one day and a cotton-tipped applicator showed that it was coming from the uterus This bleeding was not accompanied by the sensation of menstruation The second bleeding began on the twenty-fifth day and twenty-five days following a curettage was light in amount lasted one day and was accompanied by the feeling of menstruation The third bleeding began on the eighty-ninth day was light in amount continued one day and was accompanied by the usual symptoms There was no bleeding after cessation of the injections She developed marked endometrial growth on treatment

Patient 7 had uterine bleeding three times while on treatment The first bleeding occurred on the fifty-ninth day and the second on the sixty-third day and both were scant and not accompanied by the subjective symptoms of menstruation The third uterine bleeding occurred on the eighty-ninth day the flow was free and bright soiled two napkins and lasted one day Speculum examination revealed this as coming from the uterus This bleeding was accompanied by the subjective symptoms of menstruation and the breasts were full and tense Moderate endometrial growth occurred

on treatment (This patient had been treated in the original experiment as patient 5 At that time she bled twice while on treatment and after cessation of injections)

Patient 8 bled cyclically four times while on treatment The first uterine bleeding occurred on the sixth, seventh and eighth days, the second on the thirty-third, thirty-fourth and thirty-fifth days, the third on the fifty-eighth, fifty-ninth and sixtieth days, and the fourth lasted nine days, from the eighty-seventh to the ninety-fifth day inclusive This last period of bleeding began five days before the end of the treatment and continued for four days thereafter All periods of bleeding were normal in amount and were accompanied by the usual subjective breast, pelvic and general symptoms that usually accompany normal menstruation Moderate endometrial growth occurred on treatment

RELIEF OF SUBJECTIVE SYMPTOMS

All these patients had most of the subjective symptoms that accompany castration Relief from these symptoms was had by patient 1 by the twelfth day, patient 7 by the ninth day, and patient 8 by the twenty-second day, patient 4 by the thirteenth day patient 5 by the fifteenth day, patient 6 by the fourteenth day patient 7 by the ninth day, and patient 8 by the twenty-first day

EFFECT OF THEELIN ON LIBIDO

Patient 1 stated that she had increased libido after the eighth day, patient 2 at the fourteenth day, patients 3 4 and 6 at the twenty-third day, patient 5 at the ninth day, and patient 8 after the seventh day This impulse became more compelling in all patients as treatment progressed except in patient 7, who was also treated in the original experiment as patient 5 She states that "libido was lost following the ovariectomy and had not been benefited by theelin treatment during either experiment"

IRRITATION FROM INJECTIONS OF THEELIN

Patient 1 was very apprehensive and quite nervous subjectively at the beginning of treatment and complained that the injection of 4 cc of theelin was very painful both during and for half an hour to several hours afterward There were also times when the patient said that she "did not feel some of the injections, depending on location given" There was a rapid response to treatment in this patient, and after the first six weeks she did not complain except for a burning sensation, at times, just after the injections All patients, at some time, stated that there was a burning sensation at the injection area for five to ten minutes following the injections, especially on the larger doses" All patients were free from induration at the injection areas at all times

HISTOLOGIC REPORT

Scrapings removed at a preliminary curettage done on each patient at the beginning of the experiment furnished shreds of tissue sufficient for microscopic study in only four of the eight patients used in this study Two of these four were used in a previous experiment in which theelin was administered, and two were from new patients who had never received theelin The latter two had been castrated less than six months previously and this has been found to be insufficient time for advanced castrate atrophy to have occurred The two patients used in the previous experiment mentioned showed endometrium quite unlike the normal The abnormalities were those characteristic of theelin

administration This, together with later evidence, shows that a certain amount of endometrial growth must have occurred after the last curettement of the first experiment and that at least some of it must have persisted for the intervening period of seven months. The third patient in this experiment, who was also used in the previous experiment, did not present any material for study at the end of the seven months interval between the two experiments. The endometrium of this patient did not respond as markedly as that of the other patients of the first experiment, which may account for the more rapid disappearance of the theelin effect on the endometrium in this patient. Patients 2, 6 and 8 of this experiment furnished no endometrial tissue on the preliminary curettage. They had all been castrated over a year and had received no theelin therapy.

A study of the curettements taken a month after the beginning of theelin therapy showed a slight amount

of treatment. The increase is also roughly proportional to the amount of theelin administered. Patient 8, who received the smallest dose, presented material for microscopic study for the first time. So we can say that all eight patients responded to their respective doses of theelin varying from relatively massive doses to 100 rat units every other day. There is a definite tendency for the glands to be longer and more complex. Patients receiving the larger dosage show very atypical, complex glands with intrapapillary processes and irregularity in the size of the lumens. There is also an appreciable congestion of vessels in the stroma.

After the third month of theelin administration, the uterine scrapings showed relatively still greater growth in all patients. This might be questioned in cases 4, 6 and 7 if one were to compare the actual thickness of the endometrium as recorded in the pictures of the patients at the end of the second month with the picture record at the end of the third month. The apparent

TABLE 2—Observations in Eight Castrated Women After Theelin Treatment

Patient	Injection	Dura- tion of Experi- ment	Activity of Breasts First Noticed	Actual Increase in Size of Breasts	Activity in Uterus in Cramps, Pelvic Fullness, Bearing Down Sensation Needling Pains etc.	Conges- tion of Cervix Enlarge- ment Purplish Red Color Increased Mucous etc.	Uterine Bleeding While Receiving Injec- tions	Uterine Bleeding After Cessa- tion of Injec- tion	Sub- jective Symptom of Men- struation with Bleeding	Relief from Sub- jective Symptoms of Cen- tration	Increased Libido	Curette ments	Endo- metrial Hyper- plasia or Growth	Irrita- tion from Injec- tions	Indura- tion from Injec- tions
1	200 R U daily	13 wk (91 da)	26th day	Yes	5th day	28th day	Yes 6th day	No	Yes	12th day	4th day	1 28 56 84 days	Yes	Yes for 6 weeks	No
2	200 R U 28 da 300 R U 28 da 400 R U 30 da	13 wk (91 da)	4th day	Yes	10th day	28th day	No	No	Did not bleed	8th day	14th day	1 28 56 84 days	Yes	No	No
3	200 R U every other day	13 wk (91 da)	16th day	Yes	10th day	28th day	Yes 17 33 76 89 day	No	Yes	23d day	23d day	1 28 56 84 days	Yes	No	No
4	200 R U every other day	13 wk (91 da)	7th day	Yes	7th day	28th day	Yes 89th day	No	No	13th day	23d day	1 28 56 84 days	Yes	No	No
5	100 R U daily	13 wk (91 da)	7th day	Yes	9th day	28th day	No	No	Did not bleed	14th day	9th day	1 28 56 84 days	Yes	No	No
6	100 R U daily	13 wk (91 da)	10th day	Yes	8th day	28th day	Yes 9 2. 89 day	No	None at 1st yes 2d and 3d yes 2d	14th day	2d day	1 28 56 84 days	Yes	No	No
7	100 R U every other day	13 wk (91 da)	25th day	Yes	13th day	28th day	Yes 9 63 89 day	No	None at 1st and 2d yes 2d	9th day	No	1 28 56 84 days	Yes	No	No
8	100 R U every other day	13 wk (91 da)	6th day	Yes	6th day	28th day	Yes 6 7 8 33 34 35 36 59 60 67 88 89 90 91 da	Yes 92 93 94 95 da	Yes each time	21st day	7th day	1 28 56 84 days	Yes	No	No

of endometrium from all patients except patients 1, 5 and 8. The endometrium resembled a normal regenerating endometrium with no appreciable abnormalities. The presence or absence of the kind of endometrium found on preliminary curettage did not influence the amount or kind of growth induced by theelin administration during the month. Apparently, the endometrium found on preliminary curettage represents a persistence of endometrium that has been induced by forces which are no longer active, in view of the following observations. The endometrium of patients 5 and 7 which showed characteristics of theelin stimulation on preliminary curettage, failed to exhibit these characteristics in the response to theelin readministration to these patients. They did, however, later reexhibit these characteristics after continuation of therapy without changing the dosage. Their reactions, as well as those with incomplete castrate atrophy at the beginning of the experiment, paralleled those with more advanced castrate atrophy.

There is a definite increase in the thickness of the endometrium after the second month of theelin administration over that found at the end of the first month

thickness must be corrected in these three cases at the end of the second month. These pictures are of tangential cuts of endometrium and appear thicker than would be the case if they had been cut at right angles to the surface plane. More suitable pictures could not be obtained. It is obvious, however, from the pictures that there is greater complexity of glands, greater density of stroma and more hyperchromatic cells in the sections made from the curettements at the end of the third month.

So far, the evidence has been presented to show that with a given dose of theelin the degree of growth of the endometrium is directly proportional to the duration of administration under the conditions of our experiment. There is another possible variable, the size of the dose. The degree of growth of the endometrium is also roughly proportional to the size of the dose of theelin administered if administered for the same period of time. There must be limitations of both these factors, but these limitations lie beyond the conditions of our experiment.

The greatest degree of growth was found in patient 2, who received by far the largest quantity of theelin

This patient received the same amount of theelin in the same period of time as was carried out on five patients in our previous experiment, and the endometrial reaction is the same in this patient as the reactions found in the four patients of our previous experiment.

Patient 1 received the same dose daily throughout the experiment. This dose was the same as that given patient 2 during the first month, two-thirds that given patient 2 during the second month, and one-half that given patient 2 during the third month. The degree of endometrial hyperplasia was much less than that of patient 2, just as the total quantity of theelin administered to patient 1 was much less than that administered to patient 2.

Patients 3 and 4 showed much less endometrial growth than patient 1, although the dose administered and the duration of administration were the same. The variation that explains the difference is that patient 1 received this size dose daily, while patients 3 and 4 received this size dose only on alternate days.

Patients 5 and 6 showed approximately the same degree of growth as was found in patients 3 and 4. Patients 5 and 6 received half the size dose every day that patients 3 and 4 received on alternate days, essentially identical dosage.

Patients 7 and 8, receiving the same size dosage of theelin as patients 5 and 6, but only half as often, show considerably less amount of endometrial growth than patients 5 and 6. It is interesting that the total quantity of 2,800 rat units was administered during the fifty-six days before we obtained any evidence of endometrial growth and that in our previous experiment we found that we had given 2,800 rat units in two weeks to obtain the same results.

The atypical gland formation so characteristic of our theelin administration experiments in which large doses were used was found to occur and thereafter persist in five of our eight cases. It is usually found to occur earlier and eventually in more marked degree in patients receiving the larger size dosages. The intensity of congestion is also roughly proportional to the dose and period of administration of theelin.

There seems to be no essential difference in the degree or kind of reaction between the patients receiving theelin for the first time and those who received intensive theelin therapy previously. The new patients 4 and 6 seemed to react more markedly than their comparable mates 3 and 5, who received intensive theelin therapy seven months previously, but new patient 8 reacted much less strongly than her mate, patient 7, who had previously had theelin therapy.

COMMENT AND CONCLUSIONS

It was noted at the beginning of this article that we had completed a previous experiment in which large doses of theelin were given to five castrated women, four of whom had their uteri intact, with the production of certain definite results.

The results obtained in the present experiment substantiate the results of the original work. It was found that massive dosage is not necessary to produce endometrial growth but that small repeated doses long continued produce growth which is roughly proportional to the amount and duration of the theelin injections. In the original experiment endometrial growth was produced by the fourteenth day, at which time 2,800 rat units of theelin had been injected. In this experiment reference to figure 1 will show that patient 3 first

developed endometrial growth at the end of twenty-eight days, as a result of having had 2,800 rat units of theelin administered. Patient 8 (fig. 2) first showed endometrial growth at the end of fifty-six days, at which time she had had a total of 2,800 rat units injected.

Such evidence as we have points to 2,800 rat units as the "minimum clinical dosage", from the point of view of rigorous scientific investigation, to be sure, such a dosage may not be the same as the effective minimum dosage. The clinical dosage must be large enough to allow for elimination of the drug and still enable the animal to retain enough to be effective in securing the physiologic result. With this reservation in mind, we feel that our paper has given evidence that 2,800 rat units, whether administered over long periods or over a shorter period, must be considered the minimum clinical dosage. Furthermore, we are aware of a number of problems that this statement creates. We have as yet no conclusive evidence on the relationship between the quantity administered and the quantity eliminated, or between the length of administration intervals and the quantity eliminated. On these points further work is definitely indicated, yet ignorance of such quantitative relationships need not necessarily and, on the basis of such evidence as we have here afforded, does not invalidate the remarkable correspondence with reference to the minimum clinical dosage that we have found in the larger number of our cases.

We might also here call attention to the fact that our experiments seem successfully to meet the question that has been often asked whether or not smaller doses might not produce the results actually obtained from the administration of theelin. We are judging the minimal dose by the development of a clearly recognizable and accepted criterion. Dosages, therefore, given previous to the development of this criterion, namely, the production of endometrial growth, must be considered clinically subminimal dosages.

Uterine bleeding, which occurred frequently, did not bear a definite relation to the degree of endometrial growth. Patients 7 and 8, who received 100 rat units of theelin every other day, showed endometrial growth and had uterine bleeding, in fact, patient 8 bled cyclically on four occasions in a normal manner. The breasts and genital tracts of all patients showed enlargement and greatly increased activity. Relief from the subjective symptoms that follow castration was had in all patients, and libido was markedly increased in nine of ten patients who were treated in the two experiments.

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ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore. The chief value of this contribution is in the demonstration of a method of approach which while not altogether new has had only limited application. The castrated woman offers a very good means for studying some of the problems of reproductive physiology. The method has been used as Dr. Werner and Dr. Collier know, particularly by Clauberg and Kaufmann in Germany. It has been possible not only to produce hyperplasia by very large doses of theelin but to convert such a hyperplastic mucosa into a pregravid one. It has also been possible to reproduce in the castrated woman a genuine menstruation both clinically and histologically by the administration of enormous doses of theelin (310,000 mouse units) followed by large doses of progestin (corpus luteum factor) totaling 90 rabbit units. The bits of tissue of which the authors show pictures are so tiny that it is difficult to draw conclusions from them. They cer-

tainly do not show hyperplasia in the sense in which gynecologic pathologists use the term. But there is no doubt, on the basis of considerable experimental evidence, that such a condition can be reproduced. I believe that the authors' results would be more clearly defined if they did not interrupt their study so frequently by the disturbing factor of curettage. Such studies as these add additional evidence in support of the broad principle that functional uterine bleeding, including that of normal menstruation, is due to a withdrawal or abrupt diminution in the level of the folliculin content of the blood. If a maturing follicle or a maturing corpus luteum is excised, bleeding results after an interval of varying length. If a castrated animal is given theelin daily for seven or eight days, bleeding results, but not until some days after the withdrawal of the theelin. I have elsewhere summarized the evidence for this rather fundamental principle in the causation of uterine bleeding and have discussed also the equally important role played by the reciprocal effects of the ovary and the anterior hypophysis. The authors mentioned that in some cases evidences of hypersecretion were seen in the endometrium after the injection of theelin. This is contrary to accepted ideas, if they mean a real secretory activity of the epithelium such as is found in the pregravid or secretory phase of the cycle. Indeed one of the criteria in the microscopic diagnosis of hyperplasia of the endometrium is the absence of any secretory activity.

DR J P PRATT, Detroit. Dr Werner and Dr Collier have opened the possibility of many problems for discussion. Among the most important of these is the demonstration of concrete anatomic and physiologic evidence of reaction to theelin by the human ovary. This contribution is especially welcome in view of the fact that animal experimentation with hormones has advanced far beyond the clinical application and that results of animal reactions have been applied by analogy to clinical problems with frequent unsatisfactory consequences. Among animals, many striking variations appear in their reaction to hormones even in closely related species. This demonstration of reaction in the human subject therefore is extremely valuable. Separation of their objective from their subjective evidence is most important, for the latter is difficult to evaluate. For this reason, observation of a change in such symptoms as libido may be open to question. How much of the change was due to psychotherapy? Reports of attempts to substitute for ovarian deficiency are numerous, but the authors hold a unique position in reporting unquestionable evidence of reaction to ovarian hormone in a series of cases in which the ovaries were absent. Even in their series considerable individual variation in response to a given dosage was noted. This emphasizes the difficulty of estimating the amount of hormone needed to substitute for deficiency when the ovaries are present but are not functioning normally. There is no satisfactory means of measuring such a deficiency.

DR E B WOODS, Iowa City. I would like to ask Dr Werner and Dr Collier whether they are able to get a hyperplasia in the true sense of the word, as Dr Novak has brought out, showing mitotic figures, an enlargement of glands, and new growth of interstitial tissue. Dr Hisaw of the University of Wisconsin was able to obtain a true hyperplasia but without the tortuosity of the glands and the 'swiss cheese' appearance which he considers to be definitely the result of the corpus luteum hormone.

DR AUGUST A WERNER, St Louis. Dr Novak remarked that these women did not bleed following the cessation of injections and that it might be due to the fact that there were too many curettements. In the first series of five women one woman had a high cervical amputation and of course she could not bleed, but three of the patients bled following cessation of injections after twenty-six curettements had been done in the first experiment which ran three months. There were thirty-two curettements done in the present experiment. Why patient 2 who was on the same dosage as that used in the first experiment and who was used as a control did not bleed I cannot tell. Dr Pratt spoke about libido. I know as well as any one that libido is an intangible something, a subjective impulse but the patient's word has to be taken for it. If a patient says that she formerly had normal libido and potency and that it was lost as a result of castration or that she had

the subjective symptoms that accompany castration or the menopause, and if after treatment the woman says "Doctor, I feel better than I ever felt in my life," one has to accept it. In reply to Dr Woods the function of theelin is to produce the interval change or growth in the endometrium, and then the secretory phase is produced by corpus luteum. These women did not have any corpus luteum. Corpus luteum will not have any effect on the endometrium unless it has been primed by theelin or the follicular hormone.

USE OF DINITROPHENOL IN OBESITY AND RELATED CONDITIONS

A PROGRESS REPORT

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SAN FRANCISCO

We have recently suggested that alpha-dinitrophenol (1-2-4) might have therapeutic value in conditions in which an increased metabolic rate would be beneficial. Study of its pharmacologic properties shows that it has the power to increase metabolism to very high levels without causing important damage to vital organs and functions. Serious harm is apparently only caused by the drug in large doses which produce too great metabolic stimulation, with resulting fever. In low, or therapeutic, doses, the metabolism may be increased 50 per cent or more over considerable periods of time without unpleasant symptoms or toxicity. Such an action is useful in treating obesity, since the increased metabolism results in loss of weight, just as it does with thyroid medication. This paper is in the nature of a progress report on results obtained to date of treating 113 consecutive cases of obesity observed in clinic and private practice.

No attempt was made to select the patients on the basis of special suitability for this treatment, and about one half of them were given dinitrophenol only after thyroid administration and dietary regimens had failed to achieve further reduction. Our report, therefore, indicates the kind of therapeutic results that may be obtained in the least promising cases of obesity. Much better results than ours might reasonably be expected with the more responsive types of obesity.²

The drug was used in the form of dinitrophenol itself or as its sodium salt. Capsules containing 100 mg of the sodium salt, or its equivalent of 75 mg of the acid, were used throughout. The two forms were therapeutically indistinguishable, as was to be expected. The usual routine was to start a patient with a dose of one or two capsules daily, given with meals, and after a week's interval to increase the medication as necessary until a weight loss of 2 or 3 pounds (0.9-1.4 Kg) weekly was produced. If patients were on a special diet at the beginning of dinitrophenol treatment, they were kept on this, otherwise they were advised to eat their normal diet without rigid restrictions. Although this undoubtedly diminished the amount of weight reduction obtained, it had the benefit of testing the drug under

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1. Cutting, W C, Mehrrens, H G, and Tainter, M L. *Actions and Uses of Dinitrophenol*. J A M A 101:193 (July 15) 1933.

2. The authors are indebted to the following physicians who by their cooperation made this report possible: Drs H Cabot, Brown Everett Carlson, D A Carson, H H Darling, C H Dong, Horace Gray, W A Johnson, D H Kaump, J E McGuinness, R B Penzotti, Frederick Proeschner, William Van Deventer and Leona Bayer Wolf.

adverse conditions. The patients returned for observation at intervals of from one to three weeks, at which times they were weighed and examined for general symptoms and for evidences of toxicity.

LOSS OF WEIGHT

The entire series of patients here considered were adults with an average initial weight of 188½ pounds (85.5 Kg). Only fifteen of 113 were males, so that the material consisted almost entirely of obese females. The average length of treatment for each patient up to the time of this report was forty days, but some have been treated as long as 125 days and others until they had lost all the weight desired. The average loss of weight per patient was 8½ pounds (4 Kg), which, with the average duration of treatment of forty days, would give a rate of loss of 1½ pounds (0.7 Kg) weekly. This average, of course, included the beginning period during which adequate dosage was being established and so does not represent the usual rate of loss under full treatment.

DOSAGE

When the data were grouped according to the dosage required for a reduction of from 2 to 3 pounds weekly, which was set up as our optimum, it was found that the average daily dose of dinitrophenol required was 2.9 capsules per patient, or 1.5 capsules for 100 pounds of initial body weight. No general relationship could be demonstrated statistically between a given dose and the resultant weight loss, since, by our method of administration, the higher doses were given only to patients who resisted lower doses. Consequently, the higher dosage groups showed no consistently better losses of body weight than did other and more sensitive patients on lower doses.

In seven patients a dose of one capsule daily (from 0.5 to 0.75 capsule for each 100 pounds) was found sufficient to produce our standard rate of loss in body weight. At the other end of the scale were twelve patients who took five or six capsules daily (from 1.8 to 3.2 for each 100 pounds) to attain the same reduction. The fastest loss of body weight observed was in a 256 pound (116 Kg) patient who lost 13 pounds (6 Kg) in two weeks on three capsules daily. The largest absolute amount of the drug was taken by a woman of 236 pounds (107 Kg) who decided she was thin enough at the end of 125 days' treatment when she was reduced 49 pounds (22 Kg). In all she took a total of 540 capsules, or 54 Gm. of sodium dinitrophenol or an average daily dose of 4.3 capsules with an average weekly loss of 2½ pounds (1.2 Kg) in body weight.

PRESENT STATUS OF PATIENTS

In the entire series of 113 cases seven were lost track of, so that our records on them are of no value. Nineteen others had their treatment terminated at varying intervals for reasons not associated with the drug or their medical treatment. Of the remaining patients, twenty-three have been dismissed with their treatment completed, fifty-two are still being treated, nine had the dinitrophenol therapy stopped because of unpleasant reactions, and three cases were given up as being uncomplicated failures at the drug. The last two groups included twelve patients or 10.6 per cent of the entire group in whom the use of the drug could be considered unsuccessful.

In the group in which reduction was completed there was produced an average loss of 13.5 pounds (6.3 Kg)

in body weight in 51.8 days, or at the rate of 2½ pounds (1.1 Kg) weekly, on an average dosage of three capsules daily. Those still being treated have lost an average of 7½ pounds (3.5 Kg) in 34.7 days on the same average dose. In the three cases in which treatment was stopped because of lack of reduction two gained slightly in weight during two to three months of treatment and the third lost only 9 pounds (4 Kg) in eighty-one days. These were all treated in the beginning of our tests with the drug when we did not feel free to administer the doses that have since been used in such resistant cases. It is reasonably certain, therefore, that these three cases would have a better outcome if they were treated at present.

FAILURES

The true failures of the drug consist in the nine patients in whom it was discontinued because of unpleasant reactions. Of these nine patients one was stopped because of a cystitis, possibly caused by a concentration of the urine as the result of profuse sweating, two because of a temporary derangement of their sense of taste, one because of a temporary gastroenteritis which, however, may have been only a coincidence and five because of skin reactions that required stopping of the drug. These reactions were observed in patients getting no more than the average dose of the drug and so were the expression of increased individual sensitivity. These reactions are discussed in more detail in connection with the side actions caused by the drug.

SIDE ACTIONS

The predominant action of dinitrophenol is to stimulate metabolism and heat production, so that the outstanding symptoms from its use are increased warmth and perspiration.³ These are experienced to some degree by practically all patients, the intensity being governed to some extent by the ease with which the patient can dissipate the excess heat produced by sweating and vasodilatation of the skin and partly also by the atmospheric temperature and humidity. About double the dosage reported in this paper is required to produce a detectable elevation of the body temperature as measured with an ordinary clinical thermometer. In twenty-seven, or 23.9 per cent of the patients perspiration or a sensation of warmth was sufficiently marked to cause complaint but in none was it so marked as to require stoppage of the drug. As a result of the increased warmth the patients wore less clothing and exposed themselves more to drafts. Colds or evidences of sinusitis were observed in ten or 8.9 per cent of the patients while on the drug but whether or not this is a real increase over the usual incidence of such disturbances we are not in a position to say. Four patients complained of shortness of breath on exertion while taking the drug.

Six of the patients or 5.3 per cent, complained of feeling tired and three others thought that their nervousness was increased. Four patients said they had attacks of dizziness. These were all psychoneurotic patients mainly at the menopause so we are not inclined to attach much significance to these particular complaints. Three had gastro-intestinal upsets of brief duration.

³ Tainter, M. J. and Cutting, W. C. *J. Pharmacol. & Exper. Therap.* 48, 410 (Aug.) 1933. It is to be published in *Hall's Physiol. J.* ⁴ Sahlin, M., Cutting, W. C. and Tainter, M. J. *Am. J. Physiol.* to be published. ⁵ Cutting, W. C. and Tainter, M. J. *Metabolism of Dinitrophenol* *J. A. M. A.* to be published.

Of a much more tangible nature, however, was an alteration in taste experienced by six patients. Three of these were in one family group, but the other three were entirely unrelated to any of these six patients. After several weeks of treatment with two or three capsules daily, these patients lost the power to discriminate between sweet and salt tastes. There was no disturbance of their other taste sensations or of other special senses. The drug was withdrawn from two of these but not from the other four patients; recovery was complete in all in from two to three weeks. We are not prepared at present to interpret the possible significance of this particular symptom.

The most important side action encountered was a skin rash, observed in eight patients, or 7 per cent of the entire series. This was manifested, usually after a one-day prodrome of mild itching, by a maculopapular or urticarial type of rash. The itching was rather intense, and with the urticaria there was considerable swelling. If the drug was withdrawn the reaction subsided in from two to five days. Treatment consisted of the usual soothing lotions and sedatives, as necessary. No sequelae have been observed. In three of the patients, dinitrophenol treatment was successfully resumed after the skin reaction subsided, without recurrence. This type of reaction is similar to the dermatitis medicamentosa of many agents but appears to occur somewhat more often with dinitrophenol in the dosage used than it does with some other common remedies. It seems to be the chief disadvantage in the use of this drug.

In all the otherwise normal obese patients there were no respiratory or circulatory symptoms, except possibly a shortness of breath in four patients. Seventeen of them, however, had systolic blood pressure over 140 before treatment was begun. In this group the average systolic pressure was 166 and diastolic 100. At the present time, the averages are 142 systolic and 86 diastolic. Their hypertension has definitely decreased during treatment. Nine of these patients are still under treatment, so that further change may occur. In patients with normal blood pressures, no important change in either systolic or diastolic pressure, or in pulse rate, has been demonstrable. Two of the hypertensive patients had albuminuria for some months prior to the dinitrophenol treatment. In both of these the albuminuria had disappeared by the end of the treatment. We have made many examinations of urines of patients on dinitrophenol treatment but have never observed the development of an albuminuria.

Three patients of the series were having attacks of angina pectoris. One had been having daily chest pain for one month, and another one had pain twice a week for over two years. No further attacks have been experienced by these patients since the first week on dinitrophenol, although they are eating and exercising more than previously.

Because of its relationship to trinitrophenol (picric acid) and other compounds, dinitrophenol might be suspected of damaging the liver. Indeed, under maximum dosage, some patients take on a slightly jaundiced appearance, especially of the sclera. It should be remembered that the drug itself is of the same color as bile pigments, appears in the urine and imparts to blood serum a color that would be read in the ordinary icteric index test as an abnormally high value. If to the serum is added a drop of 5 per cent solution of hydrochloric acid the dinitrophenol is decolorized without modifying the color of bile pigment and the true icteric index can

then be read. Using this test, we have not observed any evidence of liver damage, but further studies are being made.

COMMENT

These results show that dinitrophenol can be used therapeutically to reduce the weight of obese patients regardless of the etiology of the obesity, and even when low caloric diets, or thyroid administrations, are ineffective. The loss of weight takes place predominantly from the hips and abdomen, as shown by measurements; the other regions share in the loss but to a lesser degree. A sufficient amount of the drug can generally be taken without discomfort to cause a loss of from 2 to 3 pounds weekly over extended periods. Indeed some patients even experience a feeling of improved well being. We have no evidence that dinitrophenol shares the hormone actions of the thyroid, even though both agents do increase metabolism. We are publishing separately observations indicating that the actions of thyroid and of dinitrophenol on cholesterol metabolism⁴ and on tadpole metamorphosis⁵ are different. Therefore, it appears that when a definite lack of thyroid secretion exists, dinitrophenol cannot supply that deficiency but can only be a symptomatic remedy in reducing the excess body weight.

Aside from the skin reactions the chief danger from this drug is in the indiscriminate or careless overdosing that may result from its sale to the public. It has already been demonstrated that an overdose of sufficient size will cause a fatal pyrexia in man, just as it does in experimental animals.³ That an overdosage may be toxic does not constitute a sufficient reason for not using dinitrophenol any more than for any one of many potent drugs commonly employed by physicians, but it does indicate that the treatment must be directed by the physician. For maximal safety the initial dose of dinitrophenol should be small and increasing doses may be employed only as the clinical response seems to warrant.

CONCLUSIONS

1 Alpha dinitrophenol (1-2-4) has been used in treating 113 consecutive cases of obesity.

2 The treatment was not successful in only twelve of these cases in three because of inadequate loss of weight, probably due to insufficient dosage, and in the other nine because of undesirable reactions to the drug.

3 An average loss of weight of between 2 and 3 pounds weekly was produced by an average daily dose of 0.3 Gm (5 grams) of the sodium dinitrophenol, in capsules taken with meals.

4 The drug has been administered to individual patients by us continuously for as long as four months without demonstrable evidences of cumulative or toxic effects.

5 The hypertension and albuminuria associated with obesity have been improved by dinitrophenol in a limited number of patients responding with reductions of body weight.

6 The most important side action has been a skin rash, which occurred in 7 per cent of patients and which necessitated stoppage of treatment in 4.4 per cent of them. The next most important side action was a loss of taste for salt and sweet, observed in 5.3 per cent of the patients. Both of these side actions cleared up quickly without sequelae.

⁴ Cutting W. C., Rystand D. and Tainter M. L. to be published.
⁵ Cutting C. C. and Tainter M. L. Proc. Soc. Exper. Biol. & Med. to be published.

7 A suitable regimen of dinitrophenol medication for adults would appear to be an initial daily dose of 100 mg of the sodium salt orally, taken with meals, with an increase at weekly intervals until a dose is established that causes a loss of body weight of between 2 and 3 pounds weekly or too marked or unpleasant symptoms of warmth and sweating

PRESENT STATUS OF VARIOUS SPINAL ANESTHETICS AND THEIR CLINICAL USEFULNESS

FRANK W. MARVIN, M.D.
BOSTON

The ideal anesthetic is still being sought and the day is not far distant when, in my opinion it will be found. Spinal anesthesia, as with all science, is constantly changing and fortunately progressing. In this progress the profession must have faith, and out of it will emerge a more exact knowledge as to the use of the various spinal anesthetics employed today. Records of anesthesia must be standardized, so that the immediate and remote effects of these drugs may be carefully studied. When this is accomplished, one should be able to develop positive opinions rather than impressions regarding the choice of the anesthetic. This choice must not only afford safety to the patient but also produce ideal conditions so that the surgeon may employ his technic of gentleness, accuracy and speed in the performance of the operation. The only contraindication in the use of spinal anesthesia, in properly selected cases, is ignorance or inexperience. New paths are rocky, however, and those who follow them must be prepared for the criticism accorded all pioneers.

As a result of its satisfactory employment in both the bad and the poor risk cases for operative procedures, spinal anesthesia became at first tolerated, later accepted, and now appreciated. The hazards of spinal anesthesia have been so largely overcome and its noxious effects on the circulation have been placed under so much better control that its use in surgery is fully justified. Hence, it behooves one to use it fre-

advise every one to employ his own technic in his own clinic. Not every new method that comes along should be adopted. If an anesthetist has good results he should continue with his technic, but on the other hand, he should not be contented to squat and ignore the newer and better preparations with the improved methods of application. Dr. W. Wayne Babcock has aptly stated that "as we progress we lay aside these aids of previous days with grateful reverence, not with apology or disdain. We shall not scorn what was done yesterday because we have something better today, any more than our interest in the past will cause us to continue the practice of the past."

Drugs formerly used in spinal anesthesia are now being replaced by newer and less toxic ones which give better and more satisfactory anesthesia. Nearly every drug employed as a local anesthetic has been injected into the subarachnoid space. Forty-nine years ago, cocaine was the first local anesthetic, introduced by Karl Koller, one year previous to the intraspinal anesthesia accidentally produced by Corning of New York. Twelve years later, Bier attempted to produce analgesia in the lower part of the body by blocking the nerve trunks of the cauda equina. The first successful operation in

TABLE 2—Comparative Fatal Intravenous Dose for Barbituric Cats

Num ber of Cats	Preliminary Intra venous		Per Cent Solu tion	Mini mum Fatal Dose Mg per Kg	Maxi mum Fatal Dose Mg per Kg	Average Fatal Dose Mg per Kg	Ratio
	Sodium Barbital Mg per Kg	Solu tion					
Procaine	14	2.50	10	20.0	103.3	49.6	1
Neothesine	7	2.0	10	24.4	39.1	23.8	1.7
Pantocain	6	2.0	1	4.0	12.0	8.6	5.8
Supercaine	9	2.0	0.5	2.1	5.0	3.5	14.2

America with spinal anesthesia was performed by Matas, in 1889. The high toxicity of cocaine precludes its use in spinal anesthesia. It is used, however, as a standard to gauge the toxicity of the other drugs. Cocaine, having fallen into disuse, was supplanted by several drugs, of which I shall mention tropacocaine hydrochloride, stovaine, procaine hydrochloride and others.

Tropacocaine hydrochloride has been used quite extensively in the past. It has a toxicity about half that of cocaine, but its duration of action is much shorter. To be effective, it must be used in a fairly concentrated solution. Because of its high toxicity and rather uncertain analgesia, tropacocaine hydrochloride has been gradually discarded.

Stovaine, prepared by Fournau in 1904 and brought into general use by Barker in 1906, has enjoyed great popularity, especially in France. It is powerful, and it produces marked muscular relaxation. There are, however, certain disadvantages in that it is more irritating to the connective tissues and nerve fibers. Headaches of rather severe intensity are noted frequently after its use. It deteriorates rapidly and must be kept in special containers.

Spinocaine (a brand of procaine hydrochloride with strychnine sulphate), introduced by Pitkin six years ago, gained a wave of popularity at first but of late it has been more or less replaced by procaine hydrochloride. The fact that it is of lighter specific gravity than the spinal fluid caused several accidents which could have been avoided had more care and precaution

TABLE 1—Number of Spinal Anesthetics During 1932

Beth Israel Hospital	237
Peter Bent Brigham Hospital	442
Massachusetts General Hospital	681
Boston City Hospital	2,603
Mayo Clinic	2,592

quently in the good operative risks. This change is gradually taking place, so much so, that the old fallacy of using spinal anesthesia in only poor general risks or nearly moribund patients should be practically extinct.

Statistics both here and abroad show that subarachnoid block is becoming more popular through its continuous use in clinics which are staffed with anesthetists specially trained and experienced in its use. Table 1 shows the number of cases in which operation was performed under spinal anesthesia in Boston, as compared with other clinics.

The use of spinal anesthetics requires an accurate and precise technic for uniform results. I strongly

Read before the Section on Miscellaneous Topics, Session on Anesthesia at the Eighty-Fifth Annual Meeting of the American Medical Association, Milwaukee, June 1, 1933.

been used and had better instruction been given as to its installation. The claims made for its very complete control are plausible, but I have not used it for the past three years.

Toxicity is the first question that surgeons ask whenever a new drug is introduced into a clinic. The Boston City Hospital has adhered always to the principle of having a complete knowledge of the toxic action of these drugs which have been furnished by the manufacturer and carefully checked up by the hospital's research department. After a careful survey and use of the several drugs, we confined our study to the following four: procaine hydrochloride, neothesisin (benzoyl-gamma [2-methylpiperidine] propanol hydrochloride), nupercaine, and pantocain (para-butylaminobenzoyl-dimethyl aminocethanol hydrochloride).

Table 2 shows the comparative intravenous toxicity of the four drugs to be discussed, as obtained in cats by Dr. Stanley Nowak at the Boston City Hospital.

The relative toxicity of these drugs as observed clinically are in the order named: nupercaine, neothesisin, procaine hydrochloride and pantocain. The reactions peculiar to these drugs may be summed up briefly as depicted in table 3. A comparison of these drugs as to their relative difference in dosage and the length of anesthesia that they produce is shown in the accompanying chart.

The clinical usefulness of these drugs might well entail a lengthy discussion, but space will not permit. I shall enumerate briefly what I consider the practical use of these drugs. All operations below the diaphragm may be performed under spinal anesthesia. Apparently there is no limitation to the number of spinal anesthetics that a patient may undergo. To substantiate this statement, I have an authentic report that spinal

of these drugs in genito-urinary surgery I shall illustrate with cases in which there were definite complications other than the genito-urinary pathologic changes. A second stage prostatectomy was performed on a man, aged 78, who had endocarditis and myocarditis, with a previous history of six anginal attacks. We advised the first stage under local anesthesia and the second stage under spinal anesthesia using pantocain. In a case of renal calculi of the left kidney in a woman who was four months pregnant and weighed 180 pounds (81.6 Kg.) and was 5 feet (152.4 cm.) tall, the stones were removed, and she expects the baby next month. Another satisfactory case in this group was that in

DRUG	DOSAGE	DURATION OF ANESTHESIA
PROCAINE	200 MG.	ONE HOUR
NEOTHESISIN	160 MG.	NINETY MINUTES
PANTOCAIN	20 MG.	TWO HOURS
NUPERCINE	10 MG.	THREE HOURS

Relative difference in dosage and length of anesthesia produced

which an octogenarian in his eighty-fourth year had a bladder stone the size of a goose egg and a prostate larger than a lemon removed under pantocain.

The relaxation afforded by spinal anesthesia renders operative proce-

dures less difficult and minimizes the shock. The safety of these drugs as compared with general anesthetics is highly desirable in genito-urinary surgery because they do not seriously interfere with the kidney function.

Abdominal, gynecologic and orthopedic surgery of the lower half of the body vary a great deal in their types of operations and the length of time they consume. The use of spinal anesthesia in obstetrics may be dismissed with the statement that we do not advise its use unless a definite pathologic complication exists. We have used it seven times during the past year in private cases without a fatality. All of the patients had definite pathologic conditions of the chest.

All four of these drugs have been used on both males and females, the youngest patient was a girl, aged 8 years, while the oldest was the octogenarian. Their weights varied from 70 to 340 pounds (31.8 to 154.2 Kg.). Gastric and intestinal surgery of all types, including resections for carcinoma, are included in our series. Carcinoma of the sigmoid was completely removed in one stage. A right colectomy was done with anastomosis of the terminal ileum to the transverse colon. This patient is well and working. Gallbladder surgery was performed with great ease, as were the long and tedious umbilical and ventral herniotomies. We have a large series of the so-called double operations in gynecology. Included in the orthopedic operations may be mentioned two spinal fusions and many fractures, including one patient who had both femurs broken. All surgery of the lower extremities, including diabetic cases, and the different circulatory diseases in which spinal anesthesia was given for diagnosis, was performed under spinal anesthesia with satisfaction.

CONCLUSION

We have used each of these drugs in our series at the Boston City Hospital during the past sixteen months without a fatality. These drugs have been used separately and in different combinations for very definite purposes, with the result that we have formed a strong opinion that it is not necessary to mix them

TABLE 3—Reactions to Drugs

	Pos- terior Root Block	An- terior Root Block	Change of Blood Pressure	Heart Rate	Respir- atory Depres- sion	Nausea	Head ache
Procaine hydro- chloride	Immedi- ate	Immedi- ate	Definite initial drop 20 to 30	Slight slowing	No	No (small doses)	No
Neothesisin	Slight delay	Slight delay	Definite initial drop 20 to 30	Slight slowing	Appre- ciable	No	No
Nupercaine	Delayed	Delayed	Definite initial drop 30 to 50	Marked slowing	Change	Slight	Few re- ported
Pantocain	Immedi- ate	Immedi- ate	Appre- ciable drop 0 to 10	No change	No	No	No

anesthesia was administered ten times within a period of fourteen months to one patient without any apparent deleterious effects.

Genito-urinary surgery offers a field in which we use spinal anesthesia as a routine, so satisfactory have been our results. Prostatectomies are performed with very small doses of the anesthetic drug. For example, we never use more than 60 (usually 50) mg. of procaine hydrochloride. When pantocain is used, the dosage varies from 8 to 10 mg. with satisfactory anesthesia. The first stage operation (a double vasectomy and cystotomy) with procaine hydrochloride shows a drop in blood pressure. The second stage, performed two

vidual case Procaine hydrochloride and pantocain are the drugs frequently employed Of these two drugs, pantocain offers everything that procain hydrochloride will accomplish and has the advantage that it does *not* lower the blood pressure as does procaine Furthermore, clinically, it is apparently less toxic than procaine hydrochloride, besides producing a longer and more satisfactory anesthesia

520 Commonwealth Avenue

ABSTRACT OF DISCUSSION

DR FLOYD T ROMBERGER, Lafayette, Ind In a recent analysis of 1,600 consecutive operations under spinal anesthesia, I found that procaine hydrochloride was employed in 60 per cent, other drugs or combinations being used in the remaining 40 per cent A study of my records shows that the onset of anesthesia is considerably slower with pantocain than with procaine, and still more delayed with nupercaine Within safe limits, parallel dosage of pantocain alone or nupercaine alone apparently is more irregular and less predictable in effect and duration Advantages obtained in combining procaine with pantocain or nupercaine are as follows A small dose of procaine produces early anesthesia (within five minutes), sufficient pantocain may be added to prolong anesthesia to one and one half hours, or enough nupercaine for two and one-half hours The combination is safe for operations extending more than one hour I am impressed with the opinion that the degree of circulatory change under spinal anesthesia is not due to any one particular drug but rather to the manner in which it is administered to the dosage employed, and to the number and kind of spinal nerve roots affected Bad risks such as patients with intestinal obstruction, those bled white from a ruptured ectopic pregnancy, or those in shock from a perforated appendix or gastric ulcer, become higher and more profoundly anesthetized from equal dosage with any drug than do the robust therefore these patients must be handled with the most conservative judgment and the keenest evaluation Therein lies the secret of success or failure of life or of death

DR FRANK A KELLA, Detroit I should like to ask the author what the relative dose is generally between pantocain and procaine

DR FRANK W MARVIN, Boston In regard to the relative dose in the average case, 75 mg of pantocain is equivalent to 75 mg of procaine Experimentally in cats I found it seven times as toxic but clinically the results with blood pressure estimations and check ups showed that it had no more but in fact had even less reaction on the patient than procaine had

DR KELLA In that proportion?

DR MARVIN Yes, sir

DR KELLA What is the usual interspace you use and how much mixture do you give it if any

DR MARVIN I usually inject in the third lumbar interspace I have placed it in the twelfth dorsal and the first lumbar spaces but prefer the third lumbar I first draw up 2 cc of pantocain from the ampule into the syringe and then connect the syringe with the needle which has been placed in the subarachnoid space and withdraw 2 cc of spinal fluid This gives 4 cc from which one can compute the dose one wishes to inject into the subarachnoid space

DR M L AXELFON Cleveland I should like to ask Dr Marvin whether he has ever used or felt the need of using the prone position for improving the effect of spinal anesthesia

DR MARVIN I have used the Jones technique with nupercaine injecting it with the patient on the side never sitting up The patient is then placed in the prone position from five to eight minutes which produces a sensory block Then the patient is turned over to the dorsal position in a slight Trendelenburg position The motor block gradually becomes established

DR AXELFON Have you tried it with spinozaine

DR MARVIN No, if I have received spinozaine for over three years I must admit I am a great much smaller dose

of these drugs today than formerly I do not think that I have ever used over 150 mg of procaine, preferring to supplement whenever it has been necessary That is probably the reason the mortality table has remained low

CONJUNCTIVAL VESSELS

A D RUEDEMANN, MD

CLEVELAND

I am offering a report of a clinical study of the blood vessels of the conjunctiva, undertaken to determine to what extent their condition would aid in the diagnosis of diseases of the blood and vascular system This study of the conjunctival capillaries was prompted by a desire to find earlier changes in the vessels than those seen in the retina in cases of vascular disease

In his excellent description of the vascular system of the eye, Leber¹ (1903) described accurately the blood supply of the conjunctiva He alluded to the superficial layer of vessels derived from the palpebral conjunctiva and the deeper layers coming from the anterior ciliaries But the superficial layer itself really lies in two planes—a surface layer and a deeper layer These two layers interchange capillary loops freely and form a rich capillary plexus at the limbus

METHODS OF STUDY

The routine procedure for studying the vascular bed of the conjunctiva is to inspect the entire ocular conjunctiva by means of oblique illumination whereby the deeper vessels can easily be counted and their course and caliber noted The superficial arterioles or loops can also be seen with the naked eye

However, when one wishes to study the finer vessels, it becomes necessary to increase the illumination and to use higher magnification The gross outline of the capillary field is best studied with a magnification of approximately sixty-eight times When one wishes to study the minor vessels, it becomes necessary to use a still greater magnification

Still further magnification is desirable I have been working on a combination camera and microscope which I hope will reveal more detail Most of this study has been made with a magnification of approximately 100 a 17 mm eye-piece and 6 mm objective, a Zeiss slit-lamp being used This has been satisfactory for determining the following data

FINDINGS IN THE CONJUNCTIVA

The deep layer of branches of the anterior ciliary arteries has little to do with the conjunctiva but more with the episcleral and scleral tissue They form a separate system anastomose freely with one another but rarely with the vessels in the superficial planes, and penetrate the sclera from about 3 to 4 mm from the limbus

The superficial vessels are small and there are approximately twice or three times as many veins as arteries The ratio of veins to arteries is not definitely 2:1 as described by Leber for the limbal plexus contains many more venules than arterioles or precapillary vessels The number of the larger superficial vessels varies tremendously both as to arterioles and to venules while the deeper layer has only from six to twelve

From the Cleveland Clinic.
Read before the Section on Ophthalmology at the Eighty-fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1931.
1. Leber, T. Die Zirkulation der Erbsen. Verhandlungen der 1. Generalversammlung der Deutschen Ophthalmologischen Gesellschaft, Wiesbaden, 1903, Band 2, S. 11.

large vessels. The difference in size is even greater as the deep vessels are actually small arteries whereas the superficial vessels are arterioles and precapillaries, and are all comparatively small.

The remainder of the ocular conjunctiva is made up of rather loose areolar tissue and an intracellular semi-solid or semifluid tissue that, under high magnification, appears to have a flow. The fibroblasts making up the superficial tissue are loosely and indefinitely arranged, with few nerves and some lymph structures.

The superficial conjunctiva moves with the lids and globe, the deeper or episcleral tissue moves only with the globe. As the conjunctiva approaches the limbus, the layers approach each other and the upper and middle planes of vessels form a heavy capillary plexus, a few of the finer vessels going over into the cornea for a distance of a few millimeters. The so-called limbal loops have no definite arrangement and are usually merely a connection between the upper and lower vascular planes of the superficial layers. The limbal capillary layer is extremely interesting, in many cases it simulates the choriocapillaries in the richness of its capillary bed. There is no regular arrangement of the capillary bed, it is not constant and has a wide variation even in normal persons.

Between the limbus and the fornices and the limbus and the external angle, there are few capillaries, the same holds true on the nasal side, except that the caruncle has a rich capillary plexus, although it is less easily studied because the areolar tissue is more dense than the ocular conjunctival tissue.

The superficial vessels afford an excellent field for the anatomic and physiologic study of the capillary system as well as a means for furthering knowledge concerning small vessel changes.

Lombard² (1911) studied capillary pressures and stimulated capillary study. Luedde,³ (1913) in a comprehensive study of 700 cases, demonstrated vascular changes in the conjunctiva, using a corneal microscope. My observations concur with his in regard to specific disease and his work apparently marked the first clinical pathologic study of the conjunctival vessels. It was not until 1921 that Krogh⁴ and his co-workers and a host of others contributed much detailed research and clinical information on this branch of the vascular system. Krogh and his co-workers demonstrated that a capillary is a vessel made up of a single layer of endothelial cells which are flat polygonal cells with a single nucleus which is raised above the surface. These cells are fastened together loosely, but they have an added support in the so-called Rouget cells which support the endothelium as hoops support the staves of a barrel plus the added strength of vertical as well as horizontal fibers.

In 1928, Knusel and von Willer⁵ used vital staining to demonstrate the circulation in the conjunctiva. I also have studied the conjunctival capillaries in animals, both living and dead, with and without injection. Part of this study has been made on the eyes of rabbits into which injections were made during observation, and others on eyes into which injections were made after enucleation. Most of the work, however, was done on patients.

Rouget cells constitute the muscle or contractile coat of the capillary and are affected by light and by histamine, dionin and similar substances. The size of the capillaries varies greatly, ranging from a diameter accommodating a stream of approximately from four to six corpuscles to a diameter through which a single red corpuscle, 7 microns in size, has some difficulty in passing. One cannot differentiate the capillary walls except in certain instances, and then only by oblique illumination. However, it is possible to see the individual cells passing along the vessel. The speed with which the blood cells pass through the vessel is not constant. In instances of vascular disease the blood flows faster through some capillaries in the same tissue than through others, nor do all the capillaries contain blood at all times. However, contrary to some reports, no pulsation is seen in a normal capillary. The flow of blood is constant in most instances, sometimes, however it may be beaded or may be jerky, or it may stop entirely when the cells appear to congeal, then suddenly be swept through the vessels at a rapid rate. These fine capillaries anastomose freely, but the blood usually follows a definite channel. However, and not infrequently, blood may be exchanged from one capillary to another and then a reverse flow takes place. Within a capillary, the cells flow from wall to wall. The plasma layer, supposedly outside the central column of cells, does not seem to be present in the vessels studied.

In all the cases studied, it was impossible to demonstrate the formation of a vascular channel. However, on several occasions, I was able to observe what appeared to be the reopening of an old channel. In one case of severe inflammation many new capillaries were present, but I was unable to discern a newly-forming vessel. The caliber of an individual vessel may change in its course or at some point during observation. However, as stated previously, the channel seemed to be in fixed position. A capillary, like a larger blood vessel, has a place for itself.

A small vessel emptying into a larger one empties in the direction of flow of the vessel. These small vessels run for a long distance without any branching, especially on the arterial side. The entire picture is that of an attempt to get all the blood possible to the limbus and there to spread out.

There is a definite difference in the structure of the wall of these minute vessels, as one readily sees cells in the fine capillary vessels, whereas the small arteries do not permit direct study of the cells. The tortuosity of the deeper vessels, so often accepted as normal, varies tremendously, and one must classify certain types as strictly pathologic because of minute hemorrhages and a definite tendency to form varicosities. In the deeper vessels there is also much variation in the walls, in cases of hypothyroidism there is thickening of the wall. The dark area, sometimes seen around the vessel opening in the sclera, is not constant, nor does it always mark a vessel opening. These pigmented areas are seen elsewhere. There is a definite thickening of the tissue surrounding the vessel opening, and this may account for some of the stasis seen in certain cases.

CHANGES IN CONJUNCTIVA IN DISEASE

My interpretation of the changes noted in cases of known vascular disease and in some other pathologic conditions of the blood are as follows:

As to the nature of subconjunctival blood, according to the study of Krogh and others blood cells may pass

² Lombard W. P. The Blood Pressure in the Arterioles, Capillaries and Small Veins of Human Skin. *Am. J. Physiol.* 29: 335-362, 1911-1912.
³ Luedde W. H. A Microscopic Study of the Conjunctival Vessels. *Am. J. Ophthalmol.* 30: 129-142, 1913.
⁴ Krogh August. The Anatomy and Physiology of Capillaries. New Haven, Conn. Yale University Press, 1922.
⁵ Knusel O. and von Willer P. Vitale Farhungen am Menschlichen Auge. Berlin S. Karger, 1928.

out between the endothelial cells in the absence of any break in the vessel wall. As noted before there seems to be a considerable number of cells and lymph in the tissue which makes it appear to flow in some cases. The subconjunctival hemorrhages are of two distinct types: first, the hemorrhage of diapedesis, in which a small collection of red cells (from 25 to 50 or more) lies outside a vessel, and second, the hemorrhage of pressure or obstruction. The latter is seen in cases of hypertension, in severe attacks of vomiting and in the subconjunctival hemorrhage that is widespread without apparent cause. However, more detailed study in the latter type of cases may reveal other minute hemorrhages of microscopic size. In a case of severe nausea and vomiting, the conjunctiva appeared congested both to the naked eye and with high magnification, the entire tissue was studded with pressure hemorrhage of the paint-brush type in miniature. The minute hemorrhage of diffusion and the minute hemorrhage of pressure disappear usually in twenty-four hours or less. It takes longer for the large hemorrhage of obstruction to disappear, often as long as ten days. The belief that with capillary hemorrhage the vessel becomes occluded is contrary to my observation. It was noted in several cases, one of severe vomiting and another of hemorrhage with pneumococcus conjunctivitis, that the small vessels continued to function without apparent interference to the flow. In larger hemorrhages with obstruction of flow or due to a major break, the surrounding capillaries do not appear to be disturbed, nor do they tend to send out new vessels into the involved area. At the end of from twenty-four to thirty-six hours, there appears what looks like a canalization through the hemorrhages. This appearance is caused by a clear zone around the functioning vessels, evidently because of disintegrated red blood cells or of fluid exuded from the functioning vessel by osmosis for the purpose of dissolving the excess protein. In either case, there is a definite breaking up of the cells with disappearance of all of the material of which they are composed. The involved vessels appear to become obliterated, and there may or may not be a new vessel. With present methods of study, this is difficult to decide. The few cases studied show that in spite of the fact that the area has been avascular for a period of time, a breaking down of the area does not result because of the nature of the tissue itself. This is not true in the retina where an area without blood supply dies in approximately six or seven minutes, and even though lack of collateral circulation is blamed for the tissue death this is dependent on the type of tissue and not on the degree of circulation.

Strangely enough obstructing thrombi or emboli are not uncommon, and one is led to conclude that the body may be bombarded with emboli without suffering any harm so long as the emboli or thrombi remain in silent areas as in the region of the ocular conjunctiva. These thrombi appear as small knobs and as obstructions to the flow in the capillary. In several instances I have observed canalization through the thrombus with the blood flowing out over the obstruction. Some thrombi block the minute vessel entirely, and in one instance there were several of these minute obstructions in a single field.

The speed of the blood is much more rapid through the capillaries in patients with hypertension and this speed may be used as a guide in diagnosis. The flow is sluggish in cases of extreme malaise and in one

instance in which the patient had recurring syncope, a low basal metabolic rate and a low blood pressure the blood flow through the capillaries was extremely slow, almost stagnant, and there was also a marked diminution in the amount of blood in any given area. As the clinical condition improved, with increase of the blood pressure and metabolism, both the volume and speed of flow in the capillary bed were augmented.

Although, as yet, the volume of capillary blood in a given area cannot be used as a basis for diagnosis, in one case of polycythemia the note was made that the entire capillary bed was loaded with blood which appeared to be packed. The reverse is true in cases of extreme anemia in which the blood volume appears to be definitely diminished. In a case of aplastic leukemia the flow was more granular and the entire tissue paler with the light reflected from the sclera very brilliant. The light reflected from the sclera is brighter in cases of anemia and hypertension in which the capillary bed is diminished than in cases of polycythemia, venous congestion, long-standing exophthalmos and edema.

In cases of hyperthyroidism, with and without exophthalmos, there is a congestion of the subconjunctival tissue. This is much greater in those cases of post-operative exophthalmos in which the deep vessels are extremely tortuous and varicose. With this congestion is associated a definite subconjunctival edema which varies in extent from microscopic to macroscopic. The congestion appears to be more on the venous side of the capillary bed than on the arterial, as does also the tortuosity.

My knowledge is too limited and the series of cases still too small for any definite notes regarding cases of papilledema. In cases of papillitis and retinitis, there is a definite increase in capillary volume, and in one case of retinal hemorrhage in which the vitreous was loaded and the red reflex was entirely absent, the blood in the capillary bed flowed slowly and the bed was heavily congested, whereas on the good side both the volume and the extent of the bed was much less.

The capillaries may come up from the deeper layers, as was noted in a case of recurring pterygium in which the new blood supply was definitely scleral and interstitial in origin, and no amount of surgical intervention or cauterization could eliminate recurrence. In patients with hyperthyroidism who have shown a postoperative increase in the degree of exophthalmos associated with hypometabolism the capillary bed and the fullness of the vessels was increased as well as the amount of conjunctival tissue while scattered along the larger deep vessels were what appeared to be fat droplets. These vessels showed a tortuosity out of proportion to the blood pressure and age of the patient. The appearance was that of stasis with slight edema. The retinal vessels usually do not reveal a difference in caliber or tortuosity, except in cases of malignant exophthalmos.

But the major role of study of the conjunctival capillaries is in their relation to vascular disease. The fine translation of Haeb's work by Zentmeyer in Norris and Oliver's "Diseases of the Eye" mentioned many of the minute changes that can be noted by this form of study. The work of Slocum¹ on vascular disease and nephritis in 1916 and 1921² furthered the impor-

¹ Zentmeyer, in Norris, W. F. and Oliver, C. A. "Diseases of the Eye," Philadelphia, J. B. Lippincott Company, 1927, 1928, vol. 4, p. 461.
² Slocum, C. A. "Study of Ophthalmic Changes in Nephritis," J. A. M. A., 67 (July 1), 1916. A Study of the Fundus Changes in Nephritis. Trans. Am. Acad. Ophthalm. and Otol., 26, 1922.

tance of study of the retinal vessels. More recently, Wagner, Bedell and others have continued to broaden the field and to define further the differentiation of vascular disease. It is hoped that study of the minute vessels of the eye will develop further the diagnostic ability of the oculist, and that it will aid in the diagnosis of these still perplexing problems. To learn that at present there is a wide difference of opinion regarding the classification of vascular diseases, one need only glance through any book on changes in the retinal vessel.

In this investigation, most changes were recorded purely on the basis of vascular study. No effort was made to read a diagnostic change into the vessels. The entire field is so new that thus far it is impossible to interpret the changes in the fine vessels as one does changes in the retinal vessels. They must be recorded as additional changes. A set of normal standards must be established as has been done in the case of the retinal vessels.

In some cases in which there apparently was no definite vascular disease except constriction and endarteritis, several fine to fairly large aneurysmal dilatations were found. These dilatations were fairly numerous in two cases of optic atrophy with a syphilitic background. No hint of aneurysmal change was discovered in the fundus.

Many similar aneurysms were seen in the minute conjunctival vessels of a man with senile arteriosclerosis and hypertension. He had had few retinal hemorrhages but had had repeated attacks of dizziness and syncope. On examination multiple hemorrhages of the pressure type and numerous aneurysmal dilatations were seen along the small vessels. In other cases, there have been similar changes. Evidently this dilatation is more common than the changes capable of detection in the retina.

Obliteration of the end-vessels, lessening of the capillary bed, straightening of the capillary branches and small hemorrhages are commonly seen in cases of arteriosclerosis. These were noted in several cases of senile sclerosis with central chorioretinitis. Capillary hemorrhages are much more common than are arteriolar hemorrhages, and while the retinal vessels may not appear to be sclerotic, the conjunctival capillaries may show changes. Further, venous congestion is much more common in arteriosclerosis than has been suspected heretofore. On the venular side, the fine venules and capillary bed are frequently full, while the arterial side is narrowed to a vessel with a lumen of a single red cell. The changes occur earlier in the conjunctival capillaries and are well established by the time the changes in the retinal vessel are sufficient for diagnostic purposes.

The diagnosis of essential hypertension is often difficult, and here also the fine conjunctival vessels show changes which present themselves later in the retinal vessels. The earliest change is a lessening of the capillary bed which increases as the disease progresses. Here also the venous side of the capillary bed usually is more congested than the arterial side.

No diagnostic changes have been noted in cases of diabetes principally because a sufficient number of cases has not been studied, and therefore many early changes cannot be differentiated. In children, no changes were noted, and in adults the changes were mainly those characteristic of vascular disease. However, further study must be made before any just conclusion can be drawn.

Cases of vascular disease with hypertension are very common. The discussion as to whether the pressure or the vascular disease is primary can be solved only by continued study, with improved experience in recognizing the earliest changes. Certainly there is no better place to study vascular changes than in the conjunctiva where the vessels are close to the surface. The fine vessels show early changes (pigtail tortuosity) followed by definite straightening, minute aneurysmal changes and numerous sacculations. The latter are not like the so-called venous sinus spaces, and they persist after the instillation of epinephrine. They are constantly present and evidently are obstructive. The lessening of the capillary bed is definite and diagnostic, as checked by the effects of intracutaneous injections of histamine. The vessels in the capillary bed may be reduced to a small number while not many changes are present in the fundus. The loss in the number of vessels, their narrowing and the venous tortuosity is typical of malignant hypertension. Small hemorrhages, some of venular origin, also frequently are seen in cases in which no hemorrhages or posthemorrhage cotton spots are noted in the fundus; there is no dilatation with arteriovenous compression, and the arteriovenous crossings are without apparent interference. In a few cases, vessels have been recoiled and looped on themselves, and here they present impulse which may simulate arteriovenous compression dilatation. This is noticeable in the horizontal vessels, especially of the deep nasal group which frequently may become varicose and double on themselves.

As has been stated, in hypertension the cells flow through the capillaries more rapidly but without discernible pulsation. In two cases, in which distinct pulsations showed where a secondary vessel left a main branch, the impact could be seen only at the vessel opening. In these cases the sclerae appeared whiter, and the light reflected from them was much more brilliant than in normal cases.

Further study, under higher magnification, should reveal still other early vascular changes. The use of red-free light reveals changes I have not yet attempted to classify.

SUMMARY

- 1 The vascular system of the conjunctiva lies in two planes, one, the superficial layer, and the other, the branches of the anterior ciliary arteries.

- 2 There is a heavy capillary plexus at the limbus.

- 3 Speed of flow, size of vessels and the action of various substances can easily be studied in the conjunctival vessels. This field apparently offers an excellent location for physiologic vascular study, as all action is in the living tissue in normal position and under controlled conditions.

- 4 Pathologically, minute hemorrhages are commonly found.

- 5 Aneurysmal dilatations are more common than in the retina.

- 6 Thrombi and emboli apparently are present more commonly than had been suspected.

- 7 Decrease of the capillary bed in the conjunctiva has been coincident with the similar change shown by the histamine flare test.⁸

- 8 Although time-consuming, it seems likely that when normal standards have been established, the study will reveal sufficient information to warrant investigation.

⁸ Ernestine A. C. and Snyder M. Histamine Flare Test in Malignant Hypertension. Personal communication to the author.

tion of the conjunctival capillaries in all cases in which blood or vascular disease is suspected

9 The vessels can be measured and counted and, to date, the patients have experienced no deleterious effect from the illumination

ABSTRACT OF DISCUSSION

DR. ARTHUR J BEDELL, Albany, N Y All ophthalmologists are familiar with the recognized methods of examining blood vessels the microscopic study of those beneath the finger-nail, the critical scrutiny and stereoscopic photography of the retinal vessels, the microscopic examination of biopsy specimens, and the inspection of the conjunctiva Each procedure has some advantages over the others, but in each one some essentials are lacking for the complete understanding or portrayal of the vessels To photograph the minute changes in the blood vessel walls of the bulbar conjunctiva is a most exacting task For many years I have used the Druner camera illuminating the field with a beam from the arc lamp focused through a quartz lens but even this method is of limited value when high magnifications are attempted The author has avoided the technical difficulties which surround the inspection of the conjunctival blood vessels To examine the vessels on a movable object, the eyeball requires an extremely well trained patient observer With the low magnifications the blood stream can be readily followed, but it is practically impossible to see the vessel wall When the 100 magnification is used the constant oscillation of the globe is so great that only in the well controlled patient can one occasionally see wall changes One can, however see vessel dilatations aneurysmal sacs irregularities of lumen difference in the rapidity of

box cars the cells Comment on the position of the cellular elements of the blood in the capillary stream is to be made with even more uncertainty, for it is not yet possible to correlate the changes one sees with known pathologic pictures

DR A D RUEDEMANN, Cleveland I want to quote a statement made in the Section on Practice of Medicine by Dr Wright to the effect that one should not feel disappointed if one is not able to make a diagnosis from the study of capillary vessels in the first fifty cases I have found that to be true because for some nine months I was unable to reach a diagnosis from the study of these conjunctival vessels

Clinical Notes, Suggestions and New Instruments

AN ECONOMICAL COVER FOR LABORATORY INSTRUMENTS

R H McCLELLAN M D PITTSBURGH

In localities in which there is a large amount of dust in the air a protective covering for such instruments as the microscope colorimeter and microtome becomes a necessity The usual glass bell jar is heavy, awkward expensive and easily broken It is in the hope that others will find it advantageous to use that a description of a cover I have devised is presented in the accompanying illustrations



Fig 1—Cover for colorimeters

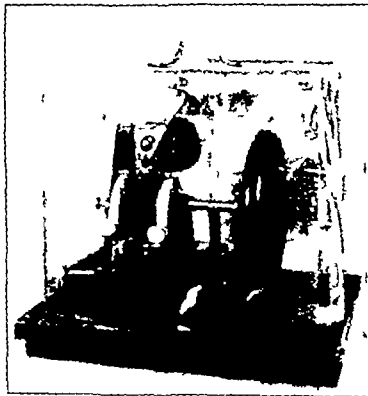


Fig 2—Cover for microtome

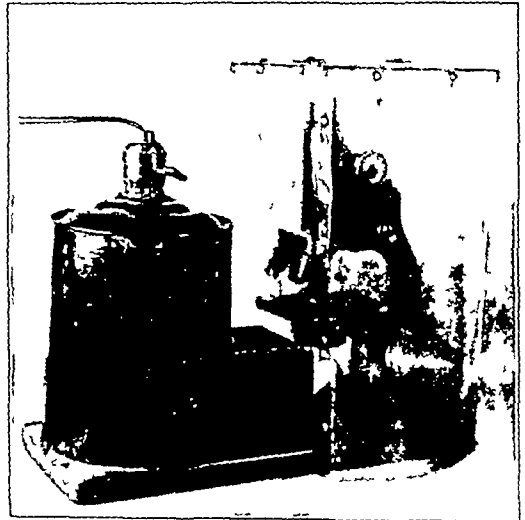


Fig 3—Cover for microscope

blood stream propulsion direction of flow and many other details involved in this investigation The survey of the conjunctival vessels of the limbus shows that in health they extend for a very short distance a fraction of a millimeter over the cornea Under normal conditions they can be traced at the limbus as loops or palisades At least three layers of conjunctival vessels can be seen during slit lamp examination and the penetrating ciliary arteries can be readily distinguished from the superficial or true conjunctival circulation It is with considerable diffidence that one can make any definite pronouncements as to the etiologic factors that control the character of the pulsation in the blood vessels In the large vessels the blood flows in a constant stream In the smaller ones there is a definite propulsive throb the blood seems to move forward and stop so suddenly as to give the impression of regurgitation In the smallest vessels the blood stream is interrupted and as the corpuscle tumbles over one another they give the impression of a long train of freight cars moving in the distance The flat cars represent the spaces without corpuscles and the

Discarded noninflammable roentgenogram are placed in warm solution of sodium bicarbonate and the photosensitive film is removed, care being taken not to scratch the base Accurate measurements of the proposed covers are made and a design worked out on paper so as to utilize the size of film on hand and to make as few joints as possible The film is ruled with a glass marking pencil and cut to size At the joints it is necessary to provide for a flap of one half inch The film is bent to shape and the angle started by lying the flat sheets on several layers of towels and scoring them at the proper place with minimum pressure a round ended instrument being used The angles are then completed by careful manipulation by hand An ordinary ticket punch is used to perforate the sheets at the proper places for assembly The final step is to insert and bend into place small round headed brass fasteners A convenient handle is readily made with the same material and fastened to the top with brass fasteners The cost of material

From the John C. O'Connell Memorial Research Foundation, St. Margaret's Memorial Hospital

and the time required to make these covers for almost any of the usual apparatus found in clinical laboratories is negligible. I have found them convenient and presentable combining low cost and light weight with the advantages of glass, such as transparency, but without breakage.

265 Forty-Sixth Street

PEDUNCULATED LIPOMA OF UNUSUAL SIZE

MURRAY N. HADLEY, M.D., INDIANAPOLIS

A white man, aged 65, a farm laborer entered the University Hospital because of a foul odor which complicated a large tumor mass hanging from the left gluteal region. The accompanying illustration shows the size and location of the tumor. It had been present fourteen years, beginning as a small growth just beneath the skin.

Physical examination was essentially negative the only departure from normal being the pupils, which were somewhat sluggish to light, an early senile cataract and a soft diastolic blow heard over the aortic area.



Ulcerated, pedunculated tumor of left buttock.

The tumor was hard and somewhat irregular and had three open ulcers on the posterior and inferior surfaces. The pedicle was soft and pliable and gave no evidence of infiltrating the deeper structures. The mass was excised with a diathermic knife, and wound healing by first intention followed. Gross examination and section showed it to be a lipoma and that diagnosis was confirmed by the laboratory report on a stained section from the tumor.

As this patient was a man of normal mentality in one of his social status, living in an average rural community, the question arises: Why did he delay fourteen years to seek relief which was available without cost? The reason is probably to be found in the part which stupidity plays in preventing people from getting adequate medical care. Any system of medical practice, short of compulsion, must in the last analysis depend on an enlightened public who, when the need arises will avail itself of the benefits of scientific medicine.

809 Hume-Mansur Building

From the Department of Surgery, Indiana University School of Medicine

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
PAUL NICHOLAS LEECH, Secretary

DIAMPYSAL NOT ACCEPTABLE FOR N N R

In 1931 the Council on Pharmacy and Chemistry took up the consideration of Ampysal (Osten Chemical Corporation, New York) at the request of the manufacturer. Before the Council's referee had reported on it the firm stated that the name of the product had been changed to Diampysal. According to the information submitted by the manufacturer, the product is another pyridine derivative with sufficient germicidal properties to arouse interest in it as a chemotherapeutic agent in bacterial infections. It is stated to be ortho oxy-benzo 2,6-diaminopyridine and is recommended by the manufacturer for use in a wide number of infections. The laboratory reports submitted by the firm to back up the claims indicate that the product may have some promise but among the case reports submitted there are few, if any, well controlled clinical studies and totally inadequate evidence from an etiologic standpoint, to justify the statement that the drug is effective in so many different types of infection. The Council postponed consideration of Diampysal (then Ampysal) to await (1) presentation of more convincing evidence of the effectiveness of the compound, (2) modification of the commercial literature on the product to conform with the demonstrable results produced by the use of the compound, (3) favorable report of the Council's Committee on Nomenclature on the name, and (4) favorable report by the A M A Chemical Laboratory on the chemical claims.

In July, 1932 the Osten Chemical Corporation presented additional evidence in favor of the product under the new name Diampysal which is stated to be a new molecule obtained by chemical interaction of Orthohydroxybenzoic acid with 2,6-Diaminopyridine. The firm presented additional clinical reports and testimonials which again represent uncontrolled observations and do not supply the required additional clinical evidence of the value of Diampysal. The firm stated that no claims were to be made for the product but it has prepared new directions for the use of Diampysal which contain the direct claim that it is a chemotherapeutic agent and specify the inflammatory conditions in which its use is recommended. These "directions" obviously constitute claims, and they are not supported by convincing evidence. As evidence in favor of the use of a proprietary name the firm submitted copies of certificates of registration from the United States Patent Office, which of course, is not the kind of evidence required by condition 3 of the Council's first report. The chemical claims may be referred to the A M A Chemical Laboratory if necessary. Without passing on the question of the name or of the chemical composition therefore the Council declared Diampysal unacceptable for New and Nonofficial Remedies because of insufficient evidence of its therapeutic value.

When the preceding report was submitted to the Osten Chemical Corporation, the firm asked for further opportunity to make clinical tests of the preparation and on agreement of the firm to avoid active propaganda the Council agreed to withhold publication of the report for a certain period. Since that time the firm has submitted a number of testimonial letters from physicians recording their experience with Diampysal in private practice and also case reports from various physicians. The testimonials lacked details and evidence of carefully controlled observation as did the letters referred to in the previous report which were not held to be acceptable evidence. The reports appeared to the Council no more convincing than the previous material which had been judged to be inadequate to support the claims for Diampysal.

The Council therefore voted to reaffirm its declaration that Diampysal is unacceptable for inclusion in New and Nonofficial Remedies because its therapeutic value is not supported by convincing evidence and adopted this addition to its previous statement.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
RAYMOND HERTWIG Secretary

TOLERANCES FOR ARSENIC, COPPER AND LEAD IN FOODS

Arsenic, copper and lead compounds are highly toxic. Their presence over certain trace quantities in foods may seriously endanger life or health. These elements occur naturally in infinitesimal quantities in many foods, but the quantities are not of physiologic concern. Foods, however, may be dangerously contaminated with these elements by insecticide sprays, chemicals used in the manufacture of foods, factory processing equipment, and other means.

Proper precautions should be taken in the culture, treatment, preparation, processing, packing, manufacture or preservation of foods that they shall not be contaminated with arsenic, copper or lead compounds. Equipment and materials used in the manufacture of prepared foods, and containers in which they are packed, should be of such composition as will not possibly contaminate foods with these elements.

Foods to be eligible for acceptance shall not contain arsenic, copper and lead in excess of the tolerances established by the United States Department of Agriculture:

- (a) 106 parts of arsenic (as As) per million of food [14 parts of arsenic (as As₂O₃) per million of food]
- (b) 30 parts of copper (as Cu) per million of food
- (c) 2 parts of lead (as Pb) per million of food

ACCEPTANCE WITHDRAWN
CEREO COMPANY'S SOY BEAN GRUEL FLOUR

Manufacturer—Cereo Company, Tappan, N. Y.
Discussion—The manufacturer has not provided the complete list of the ingredients and quantities thereof, chemical analysis, specifications or description of materials used in its preparation, and description of manufacture being required for all accepted foods by the Committee's present Rules and Regulations. The previous acceptance of the Council on Pharmacy and Chemistry and later of the Committee on Foods is therefore being withdrawn, the product will no longer be listed among the Committee's accepted foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION, FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMOTION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

- (a) GILSTERS BEST FLOUR (BLEACHED)
- (b) GILSTERS FEATHERLITE PLAIN FLOUR (BLEACHED)
- (c) GILSTERS MOTHER'S JOY PLAIN FLOUR (BLEACHED)

Manufacturer—Gilster Milling Company, Mill Steelville, Ill., Office Chester, Ill.
Description—(a) Soft winter wheat short patent flour bleached.
(b) and (c) Soft winter wheat long patent flours bleached.
Manufacture—Selected soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, p. 2210. Chosen flour streams are blended and bleached with a mixture of calcium peroxide and benzoyl peroxide and with chlorine.
Claims of Manufacturer—For bread, biscuit, cake and pastry.

EATMOR CRANBERRIES PAMPHLET "FOOD VALUE OF CRANBERRIES AND CRANBERRY SAUCE"

Sponsor—American Cranberry Exchange, Inc., New York.
Discussion—The pamphlet briefly presents the chemical analysis including the mineral constituents, nutritive and physiologic values, and the vitamin content of fresh cranberries. Ingestion of normal amounts scarcely affects the body's alkali reserve. The acidity of the urine is slightly increased by the elimination of the small amounts of benzoic and quinic acids present in the fruit but there is nothing to indicate that the increase has any physiologic significance. The preponderant fruit acids are citric and malic. Cranberries are a good source of vitamin C and contain small amounts of vitamin A and iodine. From 3 to 4 Gm. daily is required to provide the vitamin C for guinea-pigs for normal growth and to protect fully from scurvy. About 80 per cent of the vitamin C is retained in whole fruit cranberry sauce. A pound of cranberries makes about 2½ pounds of whole fruit cranberry sauce with a sugar content of from 40 to 45 per cent.

SMITH'S BEST FLOUR (BLEACHED)

Manufacturer—Commander-Larabee Corporation, Minneapolis.
Description—Hard winter wheat patent flour (bleached).
Manufacture—Selected hard winter wheat is cleaned, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one twenty-eighth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (three-fourths ounce per 196 pounds).
Claims of Manufacturer—A patent flour primarily intended for family use.

D-ZERTA

A SACCHARIN-SWEETENED GELATIN DESSERT, SUGAR AND CARBOHYDRATE FREE, FRUIT ACID—FRUIT FLAVOR (LEMON, ORANGE AND RASPBERRY)—ADDED NATURAL COLOR.
Manufacturer—The Jell-O Company, Inc., Le Roy, N. Y., Division of General Foods Corporation, New York.
Description—A gelatin dessert preparation containing gelatin, tartaric acid, saccharin, fruit flavors (lemon and orange oils and true raspberry extract), and added natural coloring (curcumin, cochineal and orcein).
Manufacture—The ingredients in solution are admixed in formula proportions, dried and packed.

Analysis (submitted by manufacturer) —

Moi ture	per cent
Ash	6.7
Fat	0.7
Protein (N x 5.55)	0.0
Saccharin	75.3
Crude fiber	1.4
Carbohydrates	0.0
Tartaric acid	0.0
	15.9

Calories—3.6 per gram, 102 per ounce.
Claims of Manufacturer—For low carbohydrate diets. Each package envelop contains:

Protein (gelatin)	2 grams
Fat	None
Carbohydrates	None
Saccharin	0.04 gram
Tartaric acid	0.48 gram
Fruit flavor (carbohydrate free)	q. s.
Natural color (carbohydrate free)	q. s.
Calories	8

N. J. C. PURE FOOD BRAND JUICE OF FANCY WHOLE TOMATOES

Distributor—Northern Jobbing Company, St. Paul.
Packer—Vincennes Packing Corporation, Vincennes, Ind.
Description—Pasteurized tomato juice with added salt retain in high degree the vitamin content of tomatoes. The same as Alice's Old Vincennes Tomato Juice (THE JOURNAL, Feb. 20, 1932, p. 649).

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SATURDAY, NOVEMBER 4, 1933

THE SESQUICENTENNIAL OF THE HYDROGEN BALLOON

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In Europe where mountain climbing had long been a popular sport, the scientific aspects of mountain sickness were recognized by the organization of special laboratories such as the one on Monte Rosa. In this country, the exigencies of the World War served more than any other factor to stimulate scientific interest in the human problems of the conquest of altitude. The value of the human machine in aviation excited the serious attention of those responsible for the success of airplane flight. The manifold details of the medical aspects of aviation were soon recognized. Thus a member of the Medical Research Laboratory of the War Department's Division of Military Aeronautics¹ pointed out that the physiologic effects of altitude on man and other animals have a threefold interest. The purely scientific aspects of life under conditions of low barometric pressure are themselves deserving of careful investigation, the fact that altitude plays a part in therapeutics and forms a feature of climatology, as applied by medicine, furnishes another reason why

the subject should be placed on a rational basis, while the coming into prominence of aviation, which requires a man to ascend into the air as the bird, frequently to moderate and sometimes to great altitudes, furnishes a third reason why one should know what constitutes fitness for life in rarefied air. As soon as an attempt is made to interpret the physiologic phenomena of altitude in terms of their causes, difficulties arise. The reason for contradictory theories is to be found in the complexity of the factors that enter into the environment at high altitudes. Among the climatic variables are the low atmospheric pressure with its low partial pressure of oxygen, the peculiarities of the sunshine, low temperature and humidity, the high wind, the electric conditions of the atmosphere, and ionization.

The principal difficulty at high altitudes, whether in the ascents of the Himalayas or in the penetration of the stratosphere, lies in the increasing lack of oxygen as altitude is gained. This presents the menace of anoxemia. The factors effective in compensation to this are increased respiration, chemical alterations in the blood and augmented hemoglobin. The respiratory change ranks first because by this means the partial pressure of the oxygen in the lungs is raised above what it would normally be at the altitude. This favors not only the absorption of oxygen in the lungs but also, after acclimatization, the passage of oxygen from the blood to the tissues. Since the alkalosis resulting from augmented breathing interferes with the passage of oxygen from the blood to the tissues, it cannot be questioned that the restoration of the normal hydrogen ion content by the elimination of the excess of alkali constitutes a compensatory process of almost if not equal importance with the increase in breathing.

Acclimatization to height whereby the oxygen-carrying capacity of the blood is gradually enhanced through physiologic adjustments is one of the features that has helped to overcome the handicaps encountered. Furthermore, surplus oxygen can be transported along with man and his machines and supplied artificially to each as the atmosphere becomes too rarefied. Through such aids man has already ascended considerably beyond 27,000 feet on foot in the highest peaks of the world until the conquest of Mount Everest has almost been made, whereas the latest balloon flights have far exceeded the 8 mile rises of pilots in airplanes. Such feats involve the need of a degree of environmental "air conditioning" in comparison with which the recent noteworthy achievements in altering the atmospheric conditions in theaters, railway trains, offices and homes seem modest.

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Infection of the nervous system after vaccination is no new fact. It has occurred in times past but has been overlooked (as many cases of so-called tetanus) or its clinical significance has not been appreciated. In recent times there has been an apparent increase of such complications, apparent because it may mean only increased recognition and reporting of cases.

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In the light of these studies on the filtrable viruses, it is of interest to consider present views as to the cause of postvaccinial encephalitis. The most reasonable hypotheses at present are the following: 1. The vaccine virus is the direct cause of postvaccinial encephalitis. 2. Vaccination induces activation of some other virus latent in the body. 3. The encephalitis is the clinical expression of a local allergic (anaphylactic) reaction of the central nervous system in which the virus acts as a sensitizing agent.

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⁴ Thomsen, O. F. Akute nicht suppurative Entzündungen im Zentralnervensystem. *Acta path. et microbiol. Scand.* 9: 437 1932.
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³ Eckstein, A. Encephalitis im Kindesalter. *Ergeb. d. inn. Med.* 1926, 1: 1-30.

⁴ Thomsen, O. Ueber die Natur der Infektionskrankheiten des Zentralnervensystems. *Acta path. et microbiol. Scand.* 1931, 193.
⁵ Vinson, A. E. The Nature of Filtrable Viruses. *Annual Report Smithsonian Institution* 1929, p. 123.
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⁷ Vinson, C. G. M. Disease of Tobacco. *Can. J. Bot.* 1932, 10: 14.

alization of the vaccine virus occurs regularly after vaccination. Thus, Herzberg⁷ studied 188 blood specimens and fifty-six spinal fluids from vaccinated persons and demonstrated the virus in the blood from three to ten days after vaccination, in the spinal fluid no vaccine virus was demonstrable even on days when the blood was positive. He found that in the course of normal vaccination the blood is free from vaccine virus by the tenth day. Moreover, no correlation has been observed between the virulence of the vaccine virus and the frequency of encephalitis. Most investigators have not seen any increase of the virus in the spinal fluid or brain of such patients. Eckstein² and his co-workers believe that postvaccinal encephalitis develops when the barrier between the blood and the spinal fluid is broken through. He further emphasizes the fact that no correlation has been observed between encephalitic complications and the severity of the vaccinal reaction, nor was there any correlation between the incidence of encephalitis and the number of vaccinations. Furthermore, it is not clear why the vaccine virus is so rarely found in the spinal fluid of patients suffering from postvaccinal encephalitis. Levaditi and his co-workers⁸ try to explain this by their concept of "autosterilization" in the central nervous system due to rapid death of the virus after its localization in the tissues. Doerr and Berger⁹ note that in generalized vaccinia there is a hematogenous metastasis of the virus into the skin. The content of these metastatic pustules is noninfectious, possibly owing to the formation of antibodies. These authors would explain in this way the "autosterilization" or death of the vaccine virus within the central nervous system. Bijl and Frenkel¹⁰ demonstrated that the brain of a child, dead of postvaccinal encephalitis, could kill vaccine virus in vitro. Finally, the view that this disease is due to the vaccine virus itself does not explain its frequent incidence in certain countries (Holland, England and Germany) and the very infrequent occurrence in other countries (Spain and the United States).

The second theory, the activation hypothesis, assumes that some heretofore latent infection is aroused by the vaccination. Until recently it was thought that the latent agent was the virus either of epidemic encephalitis or of poliomyelitis, but this has not been proved. Levaditi and Nicolau¹¹ studied the "activation" effect of vaccine virus by inoculating the nasal mucous membrane of the rabbit with herpes virus and simultaneously vaccinating the animals. The result was a typical herpetic encephalitis, which did not occur in the unvac-

inated controls. Nevertheless, in human beings with encephalitis after vaccination it has been impossible to find any except the vaccine virus in the brain or spinal fluid. However, the proponents of the activation theory do not agree on the nature of the activated agent. Some say it is the herpes virus, others maintain it is the virus of epidemic encephalitis, and still others blame a virus as yet unknown. Thus far the facts do not warrant the acceptance of the "activation" theory as an explanation of postvaccinal encephalitis.

The third hypothesis considers the cause to be the inflammatory reaction in the central nervous system induced by the union of virus (antigen) and the specific antibodies. This reaction is thought to be similar to that occurring in the skin during generalized vaccinia and would depend on a considerable concentration of the virus in the brain.³ The definite incubation period of ten to twelve days would also tend to support this theory. In this connection Glanzmann¹² suggests that the central nervous system is sensitized and that there is lively antibody production, associated with local anaphylactic reactions.

It is well known that acute nonsuppurative encephalitis, similar clinically and pathologically to vaccinal encephalitis, may occur after measles, rubella, varicella, variola, mumps and pertussis. Freud¹³ in 1891, in his classic monograph on cerebral palsies in childhood, reported in detail cerebral complication after acute infectious diseases in childhood. He further noted that cerebral complications may occur after vaccination and cited previous reports of cases. Many of the infectious diseases of childhood are characterized by their dermal reactions (exanthems). Since the central nervous system is of ectodermal origin, it might be expected to react to some of these dermatotropic viruses.

As concerns prophylaxis, it is recommended by the English commission (1930) that vaccination be done during the first year of life, that one small scarification is sufficient, that revaccination be done at from 5 to 7 years and at from 14 to 17 years, and that routine follow-up examinations be carried out from fourteen to seventeen days after vaccination.

In the treatment of patients suffering from postvaccinal encephalitis the use of convalescent human serum or serum of persons successfully vaccinated has given gratifying results. The success of this treatment rather tends to indicate that the vaccine virus itself is the cause of the disease. However, the local and constitutional factors that determine the anomalous geographic distribution still remain to be explained.

At present, then, no agreement has been reached as to the etiology of postvaccinal encephalitis. This need not, however—indeed, certainly should not—interfere with the continued practice of smallpox vaccination.

7 Herzberg H. Untersuchungen über post vaccinale Encephalitis. Zentralbl. f. Bact. **119** 175, 1930.

8 Levaditi C, Lepine P and Schoen R. Au sujet des neuro-infections mortelles auto-sterilisables. Compt. rend. Soc. de biol. **100** 1166, 1929.

9 Doerr R and Berger E. Postvaccinal Encephalitis. Handb. d. path. Mier. S. part 2, 1930, p. 153.

10 Bijl J P and Frenkel H S. Experimentelle Untersuchungen über Encephalitis post vaccinalis. München med. Wehnschr. **76** 1390, 1929.

11 Levaditi C and Nicolau S. A propos de l'etiology de l'encephalite post vaccinale. Compt. rend. Soc. de biol. **94** 114, 1926.

12 Glanzmann E. Die nervösen Complicationen der Variellen Variola und Vaccine. Schweiz. med. Wehnschr. **57** 145, 1927.

13 Freud Sigmund and Rie O. Klinische Studien über die halbseitige Cerebral Lähmungen der Kinder. Vienna, 1891.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS EDUCATION PUBLIC HEALTH, ETC)

ARIZONA

Health Education Division Created—The Arizona State Health Department established a division of health education during October, in an effort to arouse a deeper interest in health problems throughout the state, according to *Public Health News*. The new department will cooperate with any community, school or club wishing to present a health program by furnishing health films.

ARKANSAS

Society News—At a meeting of the Pulaski County Medical Society, October 2, Dr Esmond R Long, Philadelphia spoke on tuberculosis — The recently organized Tri-County Medical Society (Yell Pope and Conway) was addressed, September 21, in Atkins by Drs Wells F Smith Little Rock, on fractures, and Henry E Mobley, Morrilton, on blood stream infections

CALIFORNIA

Births in Maternity Homes and Hospitals—In 1932, 50,280 births, or 644 per cent of the 78,108 births registered in California, occurred in maternity homes and hospitals, as compared with 622 per cent in 1931. Of the 50,280 births occurring in institutions, 11,322, or 22.5 per cent, were in county hospitals.

Society News — Biron Fitts district attorney for Los Angeles County spoke on legal medicine, and medicine and criminology before the Hollywood Academy of Medicine, October 19 — At a meeting of the Society for Neurology and Psychiatry in Los Angeles October 18 Dr Samuel D Ingham, among others, spoke on 'Ruptured Aneurysm of the Internal Carotid' — Dr John V Barrow among others gave an illustrated lecture on "Clinical Amebiasis" before the Pacific Physiotherapy Association in Hollywood October 18 — Dr Walter C Alvarez, Rochester, Minn addressed the Alameda County Medical Association Oakland October 16, on abdominal pain

Clinical Departments Reorganized—Numerous changes made in a recent reorganization of the clinical departments of the College of Medical Evangelists, Los Angeles, include the following:

Dr Charles C Browning emeritus professor of tuberculosis
Dr William A George emeritus professor of surgery
Dr Albert L Hill emeritus professor of pediatrics
Dr John V Barrow, director of clinical teaching in the department of
medicine Los Angeles County General Hospital

Dr. William H. Olds appointed professor of clinical surgery and director of clinical teaching department of surgery, Los Angeles County General Hospital.

Dr. Arthur B. Cecil appointed professor and head of the department of urology.

Dr. Carl R. Howson promoted to professor and head of the department of tuberculosis

Dr. Cyril P. Courville professor and head of the department of neurology

Dr. William A. Boyce for many years professor of ophthalmology, now head of the department.

Dr. Robert F. Moody appointed as professor and head of the department of pediatrics

Dr. Wilton L. Halverton, head of the department of communication studies, with the rank of associate professor.

Dr. Malcolm R. Hill, head of the department of psychology with the rank of associate professor.

D. Clifford L. Walker, professor of clinical embryology

Dr. Owen H. H. ... of clinical ...

Dr. John F. Grant, Jr. a member of the medical staff
Dr. Joseph A. L. ... a member of the medical staff

Dr. Thomas S. Kimball, at the residence of Dr. Thomas I. Ziehl, assistant director of Forestry

D. Washed A. Washed B. Washed C. Washed

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8:55 to 9 o'clock central standard time over Station WBBM (770 kilocycles or 380 meters).

The subjects for the week are as follows:

✓ member - Single Trouble

November 9 The Wrong Way Down

There is also a fifteen minute talk sponsored by the Association on Saturday morning, from 9:45 to 10 o'clock over Station WRLM.

The subject for the week is as follows:

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CONNECTICUT

Hospital News—The new \$250,000 Greenwich Municipal Hospital was dedicated recently, Drs Shirley W Wynne, health commissioner of New York City, Stanley H Osborn, Connecticut state health commissioner and Raymond D Fear, health officer of Stamford, were the special guests.

Semiannual Meetings—The Hartford County Medical Association held its one hundred and forty-first semiannual meeting at the Manchester Country Club, South Manchester, October 24. Speakers were Drs Amos E Friend Manchester, on 'The Nasal Sinuses in Relation to Eye Disorders', George L Tobey Jr Boston 'Nasal Sinusitis,' and Francis A Faught, Philadelphia 'Medical Economics the Philadelphia Recommendations'. At the one hundred and fiftieth semiannual meeting of the New Haven County Medical Association in Waterbury, October 26 the program was presented by Drs James J Hennessy Waterbury, on 'Bronchoscopy in General Practice', Milton F Little 'Treatment of Unilateral Cataract with Contact Glasses', George Blumer, New Haven, 'Diagnosis of Encephalitis', Stanley H Osborn Hartford state health commissioner 'X-Ray Survey of Children in a Search for Tuberculosis', and Herbert R Edwards New Haven 'The X-Ray Findings of Six Thousand Four Hundred School Children in New Haven'. Dr Howard W Haggard, New Haven, was the dinner speaker.

DELAWARE

Health at Wilmington—Telegraphic reports to the U S Department of Commerce from eighty-five cities with a total population of 37 million for the week ended October 21 indicated that the highest mortality rate (23.5) appeared for Wilmington and the rate for the group of cities as a whole 10.7. The mortality rate for Wilmington for the corresponding period last year was 16.7 and for the group of cities 10.5. The annual rate for eighty-five cities for the forty-two weeks of 1933 was 10.8 as compared with a rate of 11.1 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

FLORIDA

Cancer Campaign—The cancer control committee of the Florida Medical Association has announced a campaign of cancer education. In addition to the distribution of literature and medical meetings other publicity methods will be used to acquaint the public with the recognition of cancer. It is planned to divide the state into districts with a member of the committee assigned to each and speakers will be provided to clubs and organizations wishing to offer programs.

Society News—The Florida East Coast Medical Association met at the Miami Biltmore Hotel Coral Gables, October 27-28. The following program was presented:

Dr Ernest B Milam Jacksonville The Interrelation of Gastro Intestinal Pathology with That of Distant Organs and Systems

Dr Clayton E Royce Jacksonville The Function of the Laboratory in the Diagnosis of Gastro Intestinal Conditions

Dr Elliott M Hendricks Fort Lauderdale What the X-Ray Can Do to Help in the Evaluation of Gastro Intestinal Conditions

Dr Gilbert S Osincup Orlando Indigestion in the Older Child

Dr Leigh F Robinson Fort Lauderdale Indigestion Associated with Gynecologic and Obstetric Conditions

Dr James Knox Simpson Jacksonville The Attitude of the Surgeon Toward Indigestion

Dr Spencer A Folsom Orlando The Relation of Indigestion to Lesions in the Chest Heart and Blood Vessels

Dr Ralph N Greene Jacksonville Psycho-Neurologic Conditions and Indigestion

The speakers at the second day's session included the following physicians:

Lauchlin M Rozier West Palm Beach Endocrinology and Menstrual Disturbances

Lester L Whiddon Fort Pierce Pellagra and the Depression

Isaac M Hay Melbourne Chorio Epithelioma

Medical and surgical clinics were conducted. At the annual banquet and dance for the association and the Dade County Medical Society, Drs Edward Jelks Jacksonville and Gerard Raap Miami, respective presidents of the organizations, were the speakers.

IDAHO

New Board of Medical Examiners—On September 15 the governor appointed the following physicians to the Idaho Board of Medical Examiners:

Alexander Barclay Coeur d'Alene Robert L Nourse Boise.
William W Brothers Pocatello Hugh P Ross Nampa
Harry L Wilson Idaho Falls Bartholomew Chipman Grangeville
The appointments will expire Dec 31 1934

ILLINOIS

Dr Miller to Lecture on Anatomy of Lung—Dr William Snow Miller, emeritus professor of anatomy University of Wisconsin School of Medicine, Madison, opened a series of lectures at the Veterans Administration Facility, Hines, October 30, with a talk on 'The Air Spaces and Their Structure'. Other subjects discussed on subsequent days were 'The Vascular Supply of the Lung', 'The Lymphatics and Lymphoid Tissue' and 'Some Applications of the Above Subjects to Disease'.

Chicago

Society News—The Chicago Medical Society will be addressed November 8, by Drs Richard H Jaffe, Henry Schmitz and Arthur H Curtis on cancer of the cervix of the uterus. Federal medical relief for the indigent will be discussed before the society November 15, by Drs William C Woodward and Roscoe G Leland, directors respectively, Bureau of Legal Medicine and Legislation and Bureau of Medical Economics American Medical Association—Wilbur Tweedy PhD spoke before the Endocrinology Club October 25 on 'Present Status of the Parathyroid Glands'. At a meeting of the Chicago Pediatric Society Dr Abraham B Schwartz Milwaukee among others discussed 'Home Versus Hospital Care of Sick Children'. Dr Isaac A Abt will address the eighteenth annual meeting of the Institute of Medicine of Chicago December 5 on 'Treatment of Whooping Cough A Study in the Evolution of Therapeutics'.

INDIANA

Tuberculosis Hospital for Wayne County—The contract was let October 16 for the construction of a tuberculosis hospital in Wayne County to be finished by August 1934. The institution will be erected with \$100,000 provided by Mrs India Esteb and will be known as the Smith Esteb Tuberculosis Hospital. In 1916 Mrs Esteb with her late husband David deeded to the county 160 acres of land located eight miles south of Richmond on State Road number 27, with the agreement that the county was to construct a tuberculosis hospital. Although the plan was considered at various times nothing definite was done until the acceptance of the recent gift of Mrs Esteb.

Society News—At a meeting of the Greene County Medical Society in Linton, October 12, the speakers were Drs Percy E McCown and Larue D Carter Indianapolis, on 'Treatment of Prostatic Obstruction' and 'Cerebral Hemorrhage' respectively. Speakers before the Eleventh Indiana Councilor District Medical Association in North Manchester, October 25 included Drs Newell C Gilbert, Chicago, on 'Angina and Coronary Thrombosis', Thomas D Allen Chicago, 'Buried Treasure in the Fundus Oculi' and Earl Palmer, Logansport 'Mental Disorders as Seen by the General Practitioner'. Dr Louis H Segar, Indianapolis, addressed the evening session on 'Facts and Follies in Medicine'. The Wayne-Union Counties Medical Society was addressed at Richmond October 12 by Dr Edward B Markey, Dayton, Ohio 'Treatment of Incomplete Abortions'. Dr Harry P Ross, Richmond, spoke on the Indiana plan as related to the child welfare department. Dr Jacob P Greenhill, Chicago, discussed recent advances in obstetrics and gynecology before the LaPorte County Medical Society in Michigan City October 19. The Hendricks County Medical Society heard Dr Rollin H Moser, Indianapolis talk on gastric ulcers, September 22. Dr Elihu P Easley New Albany discussed the trend of the practice of medicine before the Floyd County Medical Society, New Albany September 8. At a meeting of the Ripley County Medical Society Osgood October 11 Dr James C Carter, Indianapolis, spoke on infant feeding. Dr Jay A Myers Minneapolis spoke before the Muncie Academy of Medicine Muncie, October 10, on 'Childhood Tuberculosis and Its Prevention in Schools'. At a meeting of the Whitley County Medical Society at Blue Lake, October 10 Dr Ernest R Carlo Fort Wayne discussed children's diseases. Dr Alois L Zihak Princeton discussed cancer before the Gibson County Medical Society in Princeton, October 9.

IOWA

Graduate Courses—The medical societies of Calhoun, Dallas Guthrie, Carroll and Greene counties recently formed a graduate study club at Jefferson. Members of the faculty of the University of Iowa College of Medicine Iowa City are presenting courses which opened September 26 on internal medicine, pediatrics and obstetrics.

MARYLAND

Dr Castiglioni Gives Noguchi Lectures—Dr Arturo Castiglioni, professor of the history of medicine University of Padua, Italy, gave the third course of lectures under the Hideyo Noguchi Lectureship of Johns Hopkins University School of Medicine. The theme of the lectures was "The Renaissance of Medicine in Italy," and following are the individual titles:

- October 23 The Dawn of Renaissance in the Life Art and Science of Italy—The Thought of Leonardo
- October 25 The Flowering of Medical Studies at the Italian Universities from Berengario to Cesalpino
- October 27 The Legacy of Scientific Renaissance and the Main Currents of Medical Thought from Fracastoro to Galileo

In 1929, Dr Emanuel Libman, New York, gave \$10,000 to establish the lectureship in honor of Dr Noguchi.

Gastro-Enteritis Following a Picnic—An outbreak of gastro enteritis among persons who attended a picnic at Fairview Beach, Anne Arundel County, in July, has been studied by the state health department, the Baltimore City and the Anne Arundel county health departments. Sixty-nine cases were found among 122 persons interviewed, out of a group of 167 who dined at the Fairview Beach Hotel. The majority of patients reported the onset of their illness within five hours after an evening supper. Some cases required hospitalization. No deaths occurred. The immediate source of the outbreak was not determined. Recommendations made by the county health department suggest that the general sanitary condition of the resort was in need of improvement. These recommendations included:

- The abandonment of a dug well.
- Provision of toilet facilities for persons who work and sleep in the hotel.
- More efficient refrigeration for food storage.
- Improved sanitation in the kitchen including repair of screens and better care of silver and utensils.
- Examination of food handlers before the opening of the 1934 season.

A somewhat similar outbreak occurred at the same resort, July 20-25 1932.

MASSACHUSETTS

Society News—Dr Eugene H. Pool, New York, addressed the New England Medical Society, Boston, October 19, on "Chronic Duodenal Stasis."—At a meeting of the New England Physical Therapy Society in Boston, October 18, Dr William H. Watters discussed ultraviolet light.—The Middlesex South District Medical Society heard "Function and Workings of the Workmen's Compensation Law" discussed by Joseph A. Parks, chairman of the industrial accident board, and Drs Francis D. Donoghue, Boston, and Charles E. Mongan, Somerville, in Cambridge, October 25.—The annual meeting of the Massachusetts Psychiatric Society was addressed by Dr Eugen Kahn, New Haven, Conn., on "Organic Drivenness—A Brain-Stream Syndrome and an Experience."—Allan Winter Rowe, Ph.D., Boston, among others, addressed the New England Roentgen Ray Society, October 20, on "Structural Relationships in Abnormal Individuals."

NEBRASKA

Society News—At the annual meeting of the Seventh District Medical Society in Fairbury, October 19, speakers were Drs James M. Willis, McCook, on "Personal Experience with Chemical Hysterectomy," Rollin Russell, Best, Omaha, "Diagnosis and Management of Rectal and Colon Lesions," Roy W. Fouts, Omaha, "What May Be Expected from the X-Ray as an Aid in Diagnosis," and Claude A. Selby, North Platte, "Medical Economics." Dr Adolph Sachs, Omaha, president of the Nebraska State Medical Association, delivered an address on "The Laboratory and the Doctor" at a dinner given by the Jefferson County Medical Society.

NEW YORK

Programs for Graduate Instruction—Courses of instruction for practicing physicians are being conducted in four counties under the auspices of the committee on public health and medical education of the Medical Society of the State of New York. The Columbia County Medical Society is having a course on dermatology and ophthalmology in which the lectures are given by Drs George M. McKee, Fred Wise, Henry D. Niles, George M. Lewis, Elias W. Abramowitz, Anthony C. Cipriano, Marion B. Sulzberger, and Isadore Rosen, all of New York. In Monroe County the course deals with infections with the following speakers: Drs Frank L. Meloney, Franklin M. Hanger, Jr., Hugh A. Hutchins, Clay L. Murray, and Benjamin P. Watson. A course on gastro-enterology is being given at the Hamilton County Medical Society at Port Jervis by Drs Albert F. K. Ayres, and John P. D'Aquila, and

Frederick Schroeder, Jr. A course in physical therapy by Dr Richard Kovacs, New York, for the Niagara County Medical Society was noted in THE JOURNAL, October 28, p. 1400.

New York City

Special Lectures—Dr Russell L. Cecil, professor of internal medicine, New York Polyclinic Medical School and Hospital, has begun a series of special lectures at the school, Wednesday afternoons. Subjects of the lectures which began, October 18, and will be given monthly till April are: encephalitis, typhoid, infectious endocarditis, influenza and the common cold, lobar pneumonia, rheumatic fever, arthritis.—A series of ten lectures on cultural medicine have been begun at New York Homeopathic Medical College and Flower Hospital. Among future lecturers will be Drs George G. Ornstein on the history of tuberculosis, William Francis Honan, evolution of modern surgery, William H. Dieffenbach, economics of medicine, and Walter Gray Crump, the art as compared with the science of medicine. The lectures are being given Friday afternoons.

Society News—The first Friday afternoon lecture of the season at the New York Academy of Medicine was delivered November 3 by Dr Charles Gordon Heyd on "The Differential Diagnosis and Early Treatment in Acute Abdominal Conditions." The second will be presented by Dr Robert L. Dickinson, November 10, on "The Doctor as Marriage Counselor."—Dr Milton C. Winternitz, New Haven, Conn., addressed the First District Dental Society of the State of New York, October 2, at the New York Academy of Medicine on "The Study of Teeth in Relation to Medical Education." The address was followed by a round table conference led by Drs Anthony Bassler, Russell L. Cecil, John H. Dunnington, Samuel J. Kopetzky, Bernard S. Oppenheimer, and Harmon Smith.—A symposium on "Disruption of Abdominal Wounds" will be presented at the meeting of the New York Surgical Society, November 8, by Drs Frank L. Meloney, Ralph Colp, William Crawford White, Roderick V. Grace, and Charles Gordon Heyd.—Dr Jacques W. Mahiniak was reelected president of the Society of Plastic and Reconstructive Surgery at the annual meeting, October 18. Drs Fred H. Albee and John M. Wheeler were elected vice presidents and Dr Arthur Palmer, secretary.

OHIO

Hospital News—Mr Charles E. Findlay, superintendent of the Springfield City Hospital, has resigned to become superintendent of the Butterworth Hospital, Grand Rapids, Mich.—The John Lowman Memorial Pavilion for tuberculosis was dedicated at the Cleveland City Hospital, September 30. The new hospital has a capacity of 350 beds. Dr Raymond C. McKay is medical director.

Faculty Changes at Cincinnati—Recent changes in the faculty at the University of Cincinnati College of Medicine include:

APPOINTMENTS

- Dr Lee Foshay, associate professor of research bacteriology
- Dr Josef Warkany, assistant professor of pediatrics
- Dr Louis G. Hermann, assistant professor in the department of surgery

PROMOTIONS

- Dr Frank E. Stevenson to associate professor of pediatrics
- Dr Waldo E. Nelson to assistant professor of pediatrics
- Dr Johnson McGuire to assistant professor of medicine
- Dr Nathan Chandler Foot resigned as professor of pathology to go to Cornell University Medical Center, New York.

Society News—Dr Clarence E. Hufford, Toledo, was elected president of the Northwestern Ohio Medical Association at the annual meeting in Tiffin, October 3. Next year's meeting will be held in Toledo.—Dr George J. Heer, Columbus, addressed the Athens County Medical Society, October 2, at Nelsonville, on surgical diagnosis.—Dr Gerald S. Shubley, Cleveland, gave an address on communicable diseases before the Portage County Medical Society, Ravenna, October 4.—Drs Howard L. Stitt and Charles L. Woodman, Cincinnati, addressed the Washington County Medical Society, Marietta, October 11, on bronchial lavage.—Dr Frank J. Lachon, Quaker City, addressed the Guernsey County Medical Society, Cambridge, October 5, on anemias.—A symposium on intestinal obstruction was presented before the Montgomery County Medical Society, Dayton, October 20, by Drs Raymond I. Johnston, Homer D. Cassel, Robert D. Hostetter, and Robert C. Austin.—Dr Wingate Todd, Cleveland, addressed the Toledo Academy of Medicine, October 6, on "The Developmental Health Examination for Children."

PENNSYLVANIA

Personal—Dr Anson J Singer, East Stroudsburg, was guest of honor at a luncheon attended by physicians from Monroe, Lackawanna and Luzerne counties at Buck Hill Falls recently in honor of his seventy-fifth birthday and his completion of fifty years of practice—Dr Irvin D Metzger, Pittsburgh was reelected chairman of the state board of medical education and licensure and Mr W M Denison, deputy state superintendent of public instruction, was elected secretary

Philadelphia

First Series of Seminars—The annual series of graduate seminars under the auspices of the Philadelphia County Medical Society on Friday afternoons began November 3. The first group of five lectures is devoted to disorders of the kidney. At the first meeting Drs John A Kolmer and Leonard G Rowntree spoke on 'Classification of Disorders of the Kidney Characterized by Symptoms of Bright's Disease' and 'The Laboratory and Kidney Disorders Tests of Renal Function,' respectively. Coming lectures will be as follows

November 10 Dr Arthur M Fishberg Glomerulonephritis
November 17 Dr Edward Weiss Hypertension and Vascular Disease in Relation to Kidney Disorders and Dr Walter I Lillie The Value of Background Study in Hypertension and Kidney Disorders
November 24 Dr Abraham Cantarow Nephroses and Dr Harold W Jones Treatment of Kidney Disorders

The meeting, December 1, will be a round table conference

Group Medical Service Plan Subject to Insurance Laws—The attorney general of Pennsylvania has recently ruled that a group known as the Philadelphia Life and Health Extension Service is performing the kind of business usually performed by an insurance company and is therefore subject to the insurance laws of the state. The ruling was handed down in response to a request from the commission on medical economics of the Philadelphia County Medical Society. Under the plan proposed by this organization medical care and attention is furnished for all illnesses and minor injuries (except those that are compensable) which can be treated in its offices for \$1.50 a year. It agrees "to make complete or partial medical examinations whenever desired or required and to make analytical reports on same if desired." The attorney general declared that in his opinion this is insurance service and is being performed contrary to law. This is true whether it is the general public or members who purchase it and whether what they pay be considered dues or a premium,' he concluded

SOUTH CAROLINA

Society News—The annual meeting of the Fourth District Medical Society was held in Spartanburg, September 26, with Drs William Egleston, Hartsville, president-elect of the state society, and Edgar A Hines, Seneca, as guests. Among speakers on the scientific program were Drs Thomas R Gaines, Anderson, on tracheotomy in laryngeal diphtheria, Lawrence H McCalla, Greenville, indications for surgery of the thyroid gland, and Job H Crooks, Greenville, dermatology in general practice

SOUTH DAKOTA

Personal—Dr Edwin T Ramsey, Clark, was elected president of the South Dakota Health Officers Association at the annual meeting in Huron, October 4—Dr William F Keller, Sioux Falls, has been appointed state prison physician succeeding Dr Herbert J Day, who plans to return to private practice

TEXAS

Society News—The annual meeting of the Fourth District Medical Society was held in Brownwood October 2-3. Speakers included Drs Charles S Venable, San Antonio on 'Treatment of Osteomyelitis with Surgical Maggots,' Arthur C Scott Temple, Modern Management of Gallbladder Disease, William Porter Brown, Fort Worth, Uses and Limitations of X-Rays and Radium in Dermatology, and Wilson D Anderson, Sanatorium, Phrenic Nerve Resection in Treatment of Pulmonary Tuberculosis. Dr Abner A Ross, Lockhart, president Texas State Medical Association, was the speaker at the annual banquet

Graduate Assembly in Houston—The second Post Graduate Medical Assembly of South Texas sponsored by the South Texas District Medical Association, will be held in Houston November 21-24. Mornings and evenings will be devoted to general sessions and afternoons to sectional meetings. There will also be round table luncheon discussions led

by guest speakers. Twenty-six guests will be present, among whom are the following, with their subjects for general sessions

Dr Isaac A Abt, Chicago, Management of the Baby in the First Three Months of Life
Dr Willis C Campbell, Memphis, Tenn, Practical Application of Orthopedic Principles
Dr John T Erdmann, New York, Tumors of the Breast
Dr Louis Hamman, Baltimore, Diagnosis of Obscure Fever
Dr John W Harris, Madison, Wis., Fundamental Problems of Clinical Obstetrics
Dr Allen K Krause, Tucson, Ariz, Tuberculosis and the General Practitioner
Dr Francisco de P Miranda, Mexico City, Ovarian Disturbances from the Standpoint of Endocrinology
Dr Bernard H Nichols, Cleveland, Roentgenologic Diagnosis of Lesions Causing Right Upper Abdominal Pain
Dr Leonard G Rowntree, Philadelphia, Recent Advances in Endocrinology
Dr Richard L Sutton, Kansas City, Mo, Diagnosis and Treatment of Cancer of the Skin
Dr Hugh H Young, Baltimore, What Operations Should Be Chosen as Best Suited for the Various Pathological Conditions Present in Prosthetic Obstruction?
Dr John H Musser, New Orleans, Comparison Between Syphilitic Arteriosclerotic and Rheumatic Heart Disease

The southwestern branch of the American Urological Association will meet in Houston concurrently with the assembly

VERMONT

Personal—Dr Frank E Farmer, St. Johnsbury, was elected president of the Vermont Medico-Dental Golf Association at its annual meeting in Rutland. William R Pond DDS, Rutland, won the tournament with a low net score of 69

Society News—Dr Grant P Pennoyer, New York, addressed the Rutland County Medical and Surgical Society, October 17, on varicose veins. In the afternoon Dr Pennoyer conducted a clinic showing the injection treatment at Rutland Hospital

GENERAL

Grants Available for Research—The Committee on Scientific Research of the American Medical Association invites applications for grants in aid of research on problems bearing on the clinical aspects of medicine and surgery. Inquiries may be addressed to the committee at 535 North Dearborn Street, Chicago

Conference on Dermatology—Under the auspices of the Washington-Baltimore Dermatological Society, the dermatologic societies of Washington, Baltimore, Philadelphia, New York, New England and Canada will convene in Washington, D C, November 18, with headquarters at the Mayflower Hotel. The program will include the presentation of a clinic by Georgetown University School of Medicine. Dr Charles Lee McCarthy is general chairman

Fellowship Available—Application for the annual fellowship of the Herbert Celler Fellowship Fund will be accepted until December 1 by the secretary, Dr Benjamin Elasoph, 941 Park Avenue, New York. Candidates should submit personal records, lists of publications, if any, outline of proposed study and suitable recommendations. This fund was established several years ago in memory of the late Dr Celler, who was associate attending physician at Mount Sinai Hospital, New York

Decrease in Automobile Fatalities Last Year—Deaths from all types of motor vehicle accidents in the registration area (except Utah) decreased from 32,429 in 1931 to 28,240 in 1932, according to the U S Department of Commerce. In Oklahoma and Arizona the rates increased slightly, but in both states the rates were less than those for 1930. In the District of Columbia the rate increased from 29.3 in 1930 and 33.6 in 1931 to 39.1 in 1932. Nevada had the highest rate in 1932, 64.5, and North Dakota the lowest, 8.6. The latter was only a little more than half the rate for 1931. In the total number of all deaths from motor vehicle accidents in 1932 there were 1,462 caused by collisions with railroad trains, 302 by collisions with street cars, and 241 by motorcycle accidents. In each of these classes there was a considerable decrease from the preceding two years

Society News—Dr Eugene L Bishop, Nashville, state health officer of Tennessee, was chosen president-elect of the American Public Health Association and Dr Haven Emerson, New York, was installed as president at the annual meeting in Indianapolis October 11. Vice presidents elected were Drs William F King, Indianapolis, John G Fitzgerald, Toronto, and Walter H Brown, Palo Alto, Calif. The 1934 session will be held in Pasadena, Calif.—Dr Willard R Cooke, Galveston, Texas, was chosen president-elect of the Central

Association of Obstetricians and Gynecologists and Dr Everett D Plass, Iowa City, was installed as president at the recent annual meeting in Milwaukee. Dr William A Coventry, Duluth, Minn, was elected vice president and Dr Ralph A Reis, Chicago, reelected secretary. The 1934 session will be held in New Orleans.—The National Association for Nursery Education held its annual conference in Toronto, October 26-28. Among discussion groups was one on the physical health of the preschool child in which the following took part: Dr Charles A Aldrich, Winnetka, Ill; Miss Mary Sweeny, Detroit; Helen Monsch, Ithaca, N Y; Dorothy Van Alstyne, Winnetka; Josephine Kenyon, New York; and John R Murlin, Ph D, Rochester, N Y.—Dr Robert A Fraser, New York, was elected president of the Association of Life Insurance Medical Directors of America at the annual meeting in Toronto, Ont., October 12-13. Among speakers at the meeting were Drs Harold E B Pardee, New York, on "Theory and Practical Application of the Electrocardiogram in Life Insurance"; Israel M Rabinowitch, Montreal, interpretation of blood sugar time curves in diagnosis of diabetes mellitus; Levellys F Barker, Baltimore, Disposition to Nervous or Mental Disease as a Consideration in the Selection of Insurance Risks; and Louis I Dublin, Ph D, and Herbert Marks, New York, "Mortality of Risks with Asthma."

PHILIPPINE ISLANDS

Society News—The Manila Medical Society was addressed recently by Drs Antonio G Sison and Liborio Gomez on rheumatic heart diseases in Filipinos, Dr Vivencio C Alcantara gave a demonstration in the use of bronchoscopic instruments.—Dr James A Doull, Cleveland, who is spending some months in the islands under the auspices of the Leonard Wood Memorial Foundation, among others, spoke on "What We Get Out of the Medical Society" before the Cebu Medical Society, recently.

FOREIGN

Personal—Dr Henry P Gilding, London, has been appointed to succeed Dr Ivan de Burgh Daly as professor of physiology at the University of Birmingham. Dr Daly recently became professor of physiology at the University of Edinburgh in succession to Sir Edward Albert Sharpey Schäfer.—Dr William Stewart Duke-Elder, ophthalmic surgeon to St George's Hospital, London, recently received the Nettleship gold medal and prize awarded by the Ophthalmological Society of the United Kingdom for the most valuable contribution to ophthalmology during the past three years.

Recent Changes Among Teachers in Germany—Prof Schwartz, Ph D of Frankfurt-am-Main has been called to Stamboul in the capacity of director of the Institute of Pathology there.—Dr Werner Lipschitz formerly professor of pharmacology at the University of Frankfurt-am-Main, has been dismissed from public service.—The following in Frankfurt-am-Main have been deprived of the right to teach: Asst Prof Dr Joseph Igersheimer Altmann (skin and venereal diseases), Dr Hugo Braun (hygiene and bacteriology), Dr Edgar Goldschmidt (general pathology and anatomopathology), Dr Marcel Traugott (obstetrics and gynecology), Dr Raphael Weichbrodt (psychiatry and neurology), San-Rat Dr Wilhelm Hanauer (social medicine), Dr Richard Koch (history of medicine), Dr Walter Lehmann (surgery), Dr Joseph Berberich (otorhinolaryngology), Dr Franz Herrmann (dermatology and syphilology), Dr Emmy Kheneberger (bacteriology), Dr Ernst Herz (psychiatry and neurology), and Dr Ernst Metzger (ophthalmology).

Deaths in Other Countries

Albert Calmette, co-discoverer with Guérin of BCG anti-tuberculosis vaccine, honorary professor of bacteriology and hygiene, University of Lille and assistant director of the Pasteur Institute, since 1927 died in Paris, October 29, of an abdominal ailment, aged 70.—Sir Arthur Mayo Robson, surgeon, teacher and writer, knighted for his activities in Egypt and Gallipoli during the World War, died in London, October 12, aged 80.—Donald John Armour, consulting surgeon, National Hospital for Nervous Diseases and formerly president of the Medical Society of London, West London Medico-Chirurgical Society, the Neurological Section of the Royal Society of Medicine and of the Association of British Neurological Surgeons, died suddenly, October 23.—Gaston Melo, Mexico, D F, head of the Mexican Department of Health, died, October 26, of heart disease following an operation for appendicitis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct 14, 1933

A National Memorial to Sir Robert Jones

In a joint letter to the *Times*, Lord Moynihan, Lord Dawson (president of the Royal College of Physicians), Sir H J Waring (president of the Royal College of Surgeons), Lord Derby and others report the steps taken for a national memorial to Sir Robert Jones. They point out that the claim of Robert Jones for universal recognition is based on fifty years of service, devoted at first to the cure, and later to the prevention, of those deformities which for centuries have meant suffering and weakness to a large proportion of the human race. Before he was born, a multitude of children grew up in helplessness. When he died his orthopedic principles and the methods he had introduced were practiced throughout the world. During the war his name became a household word. He carried to thousands of disabled soldiers the same message of hope and recovery as to the crippled child. In salvage of life as in restoration of limb he revealed to a great multitude of fellow surgeons principles of treatment which are now the common heritage of civilization. A primary object of the national memorial is to perpetuate his work so that his teaching shall never be forgotten or misinterpreted, and so that the branch of surgery of which he was the master shall continue to be taught according to his ideals. To this end it is proposed to found a Robert Jones lectureship in the Royal College of Surgeons and to institute a traveling research fellowship in orthopedics, to be awarded alternately by the Royal College of Surgeons and by the University of Liverpool (in which city Jones practiced the greater part of his life).

It is also desired that this national memorial shall bear testimony to the constructive idealism in which Jones demonstrated the efficacy of his mission, particularly in regard to crippled children, not only as to their complete cure but as to the prevention of deformities. Throughout Great Britain are hospitals, after care clinics and training centers raised under his direct guidance. To unite these two principles of scholarship and social service is to recognize in our time the universal influence of Robert Jones on the welfare of our people.

Should the total sum subscribed equal or exceed the hopes entertained after provision for the main objects of the memorial, any balance remaining will be deposited with trustees for financial aid to orthopedic centers which need it, and will be denominated "The Robert Jones National Trust Fund."

Is Health Insurance Becoming a Dole?

Sir Henry Brackenbury in his presidential address to the Section of Preventive Medicine at the recent annual meeting of the British Medical Association asked the question: Is health insurance becoming a dole? He found that people were more concerned with the doling out to them of small sums week by week or month by month, than with medical service. He referred to the fact that owing to unemployment a large number of the insured were passing out of the scheme. His remedy was a further development of medical socialism. So-called health insurance is to a greater extent not an insurance system at all but a subsidy to which the state and the employer make a larger contribution than the insured person. Once on the slippery slope of socialism the tendency is always downward and more and more is demanded from the taxpayer. This was illustrated at the twenty-first annual meeting of the National Association of Insurance Committees when it was stated that the council visited the ministry of health to discuss the position of insured persons who would cease to be entitled to medical

benefit at the end of the year because of their failure to contribute in consequence of unemployment. Their suggestion, of course, was more money from the taxpayer. They asserted that the original act was created to prevent sickness and not merely to pay for sickness. They said that the government "agreed to make a contribution, but did not hesitate later to break its contract and thereby made it impossible for certain organizations to provide what was needed. The equivalent of \$100,000,000 to \$150,000,000 having been taken from insurance funds, was it unreasonable to ask for \$150,000 or \$200,000 to prevent sickness?" This was a flagrant misrepresentation. As a matter of fact, there was no "contract" such as is postulated. When the so-called insurance scheme was established by the most prodigal politician that ever spent the taxpayer's money, the demand for still more from the state soon arose, because expenditure, as is always the tendency with socialistic finance, was in excess, and this was granted. At a later date, when economy became necessary, because of socialistic prodigality, some of the additional subsidy was withdrawn. There was no "contract" in the matter. A resolution was moved that "the only course to preserve these persons in medical benefit is to press for a government grant." A member moved an amendment, expressing willingness to cooperate on any practicable scheme for providing medical treatment for unemployed persons but refraining from making any representations in the matter. He asked why the insurance principle which was inviolate in one sphere should not be so in another? Why should the state scheme be treated differently from other forms of insurance? The amendment was defeated by a vote of 226 to 78.

England Repudiates the Aryan Doctrine

A frank and authoritative announcement of the British government's attitude toward minorities in general, and the Jewish minority in particular, was made by Mr. Ormsby-Gore, the British delegate at a discussion of the League of Nations in Geneva. It arose out of a speech by the German delegate Herr von Keller complaining that the rights of German minorities in other countries were not sufficiently recognized and claiming that they were attached to Germany by "an unbreakable link." "We reject absolutely," said Mr. Ormsby-Gore, "this conception put forward by the German delegate with regard to the racial homogeneity of political units and states." Turning to the German Aryan doctrine the British delegate said that it could not apply to the British Empire, in which it had always been a cardinal principle that no person could be debarred from holding any post, in the words of Queen Victoria in her proclamation as Empress of India, "by reason of race color or creed." The fundamental and only thing that held the British Empire together was equality of status and freedom. The Empire did not conceive itself in terms of racial solidarity but in terms of the free association of free peoples, encouraged to develop their national consciousness within the greater unity. He would not have referred to the question of the Jews had not the German delegate queried whether they ought to be regarded as a minority in any country. "If in connection with the Germans in Czechoslovakia and other neighboring countries he emphasizes the ethnical basis, he cannot have it both ways. If the racialism of the Aryan German be admitted that of the Jews must also be admitted. I say definitely that there is among the Jews a sense of their historic continuity throughout their dispersal and that they form a racial minority which deserves the same treatment everywhere as all other minorities in all countries, above all, equal rights of citizenship. Wherever they have been well treated they have been the most loyal and helpful members of the nation."

The attempt to pervert anthropology for political ends is not new but here it is audacious, for the persecution of all persons of pacifist or liberal views Jew or Gentile, shows that the

racial reason is only a cloak for the real motive. A different perversion of anthropology has been furnished by the Nazi Reich commissar of justice, who claims that "from the Germanic race have sprung the highest achievements of man." This has led a well known anatomist and anthropologist, Prof. Le Gros Clark, to point out in the *Times* that there is no such thing as 'a Germanic race' but only a mixture of races. He quotes another anatomist and anthropologist, Prof. T. C. Parsons, who has shown that since the sixth century the broad headed Alpine race has been steadily supplanting the Nordic in every part of Germany. But what of the superiority? It is curious that the commissar should make this claim in the face of the fact that the Nazis complain of the greater success of the Jews in the professions. It is only since their expulsion that we have realized in England the extent to which Germany was indebted to them for her most eminent men.

A Diabetic Association

Mr. H. G. Wells, the writer, invited "his fellow diabetics" to form an association to help King's College Hospital (which has a special clinic for diabetes under the control of Dr. H. D. Lawrence) in gratitude for what the modern treatment of diabetes had done for them. Mr. Wells has now obtained \$4,000 for the hospital and is proceeding with the formation of his diabetic association. For this purpose, a number of those who responded to his appeal will dine with him at a special table at the festival dinner of King's College Hospital.

PARIS

(From Our Regular Correspondent)

Sept 20, 1933

Procaine Hydrochloride in the Treatment of Rheumatism

The medical profession is indebted to Professor Leriche of Strasbourg for a method of treatment for sprains and mild luxations, which consists in injecting a cubic centimeter of a solution of procaine hydrochloride (1:1,000) at the level of the painful areas. The anesthesia thus secured suppresses the reflex that supports the contracture of the ligaments. A person with a sprain thus treated can walk immediately after the injection. Schulmann and Benassy have applied this method to persons with rheumatic joint pains with complete success. Even in cases of chronic arthritis, the injection of procaine at the insertions of the ligaments and the articular tendons brought about quickly not only relief from the pain but also restoration of the movements. The procedure has more chance of success when the functional disorders are more significant and the articular lesions are more discrete. To explain these results, both Schulmann and Leriche assume the existence of a short reflex in which the area of excitation is located in the insertion of the ligament. This communication to the *Societe des medecins des hopitaux de Paris* brought forth an observation from P. Weill, who stated that he had secured the same results by the periarticular injection of 0.20 Gm of cocaine. He obtained in this manner some startling results, the patients recovering immediately the normal amplitude of movements. This method constitutes an interesting differential procedure in the treatment of genuine arthritis and periarthritis, the former being but slightly influenced by the anesthetic.

Diagnosis of Tuberculosis by Examination of the Gastric Contents

Mr. Saye presented recently before the *Societe de biologie* work performed in collaboration with R. Shelton and J. Domech Alsina on the early diagnosis of tuberculosis in children. The method consists in the inoculation of the stomach contents into the guinea-pig. Armand-Delille and Vibert had already used this procedure in confirming the diagnosis of pulmonary

tuberculosis It is today established beyond doubt that tuberculous infection originates in the digestive tract and not in the lungs Examination of the stomach contents enables the physician to discover the first stage of the infection before there is any generalization In Mr Saye's investigations, inoculation of guinea pigs with gastric contents derived from 146 children whose ages ranged from a few days to 10 years, and only 107 of whom were avowedly tuberculous, proved positive in forty-four cases or 41 per cent In one child, the result was positive two weeks before the appearance of the allergy In nineteen of the children, only benign tuberculous types without apparent signs were involved These observations show that it is wrong to base tuberculosis prophylaxis solely on the more evident dangers of contagion Mr Saye concludes that one cannot hope to eradicate tuberculosis in children other than by introducing early vaccination with the BCG vaccine At this point, Mr Sergeant remarked that it is more simple to search for bacilli in the stools, provided cases of tuberculous enteritis are excluded Mr Saye however, contended that examination of the gastric contents and inoculation in guinea-pigs constitute an easier procedure Mr Rist added that this method is applicable also to adults (who are much more numerous than is supposed) who swallow their sputum Mr Saye sees, furthermore, in the absence of bacilli in the stomach of the person who has been unquestionably tuberculous an interesting evidence of recovery

BERLIN

(From Our Regular Correspondent)

Sept 18, 1933

No Retrenchment in Physicians' Work in Hospitals

Hospital administrators are no doubt convinced that they have for some time reached the limit in economizing and hence they have refrained from further retrenchments Little attention, however, appears to have been given to the fact that the hospital personnel, and particularly the physicians, has been burdened almost beyond endurance Retrenchment has necessarily been associated with the danger of a lowering of standards It has been almost unavoidable that, owing to the increase in the large amount of paper work and the abandonment of many measures more or less important in department administration in the laboratories in the radiologic department and elsewhere, the real personal work with the patient has been cut short In this connection special significance is attached to an annual report of the surgical department of the hospital Bergmannsheil' in Bochum, for the year 1931, which was recently rendered by the chief physician, Professor Magnus He says that it is impossible to give, by means of statistics a complete picture of medical or surgical activities Statistics will, however, furnish a partial basis for an inquiry as to whether there has been a proper distribution of labor Comparing clinical activity it will be observed for example, that in 1926 eight assistant physicians made, on an average 607 examinations each and in 1931 nine assistant physicians averaged 1220 examinations With respect to the case histories the proportion was 463:524 As regards case histories attention should be called to the fact that they do not lend themselves to comparisons because as time goes on they tend to become more detailed and to be written with a view to future use as a basis for the estimation of degrees of disability In 1931 463 letters per assistant physician were written to the physicians who referred the patients and the total number of papers and documents written or filled out per assistant physician annually averages now 2147 as against 1131 five years ago The number of operations performed by each assistant is now 549 as compared with 292 and the number of roentgenograms per assistant is 2026 as against

1,817 These figures show clearly how the assistant physicians are overwhelmed with reports and paper work in general To expedite this work, the hospital now has six secretaries, as compared with four in 1926 Each secretary gets out, on an average 3,232 documents, as against 2,262 formerly These figures hold good today and must be taken as a serious sign of the times

Economical Management of Hospital Kitchens

The Gutachterausschuss für das öffentliche Krankenhauswesen has published "Criteria for an Economical Management of Hospital Kitchens" The details of a diet are determined by the prescriptions of physicians, the local customs of the population and the organization of the commissary department of the hospital concerned Every hospital must have a system of diets There must be a permanent committee on cuisine and the art of preparing menus for a dozen or more regimens must be thoroughly understood Permanent supervision must be exercised to prevent the more expensive dietary forms being used unnecessarily To determine whether the food allowance is too large it is more important to inspect the amount and nature of the food left on the plates than it is to compute the calorie content Serving an undue number of side dishes should be avoided A single dietary form must not be made too individualistic The daily money allowance serves as the basis for the selection of the foods for the various classes of service and the different types of personnel The expenditures for food are influenced to a great extent by the quality of the food and the skill of the buyer It is not always necessary to select the first quality An administrative official is usually a better buyer than the head cook Economies are possible through careful judgment in buying for example, restriction in the use of white bread in favor of rye bread when that is possible As a minimum ration often 200 Gm of rye bread daily will suffice, except on days when a cold supper is served The use of coffee substitutes in place of genuine coffee, which should be served as a medicine and only on medical prescription, is good economy Butter is needed in the kitchen only for the preparation of the diet for patients with stomach ulcers and for a few other diets and can ordinarily be replaced by a good quality of vegetable fat Forced feeding and the diet for patients with diabetes are exceptions For the general diet the best substitute for butter is the best grade of vegetable oil "butter" its low vitamin content need cause no anxiety provided the diet has the proper components The expensive diet of tuberculous patients can be cheapened without harm by fixing the butter allowance at 50 Gm and giving the remainder of the fat requirement in the form of lard or good vegetable oil "butter" Only the best quality of meats should be purchased whether they are procured from the butcher or whether the hospital does its own slaughtering The following allowances of raw meat (with bones) will often suffice beef 120 Gm, pork 100 Gm, veal, 125 Gm, fish 250 Gm sausage 100 Gm A large institution will find it an advantage to establish a meat market of its own In the case of peas beans and lentils, there is a wide range of prices a good average quality will usually suffice There are many different qualities of rice an average quality is sufficient Expensive olive oil can be replaced by sesame oil, peanut oil or soy bean oil The substitution of glucose for sugar is not recommended without medical approval

Neuropsychiatric Departments in General Hospitals

The question of the need of neuropsychiatric departments in general hospitals is being discussed and both internists and psychiatrists are claiming this field for themselves This question was discussed at the recent Congress of German Psychiatrists

According to the Breslau psychiatrist Prof. Johannes Lange, there are only about twenty special departments of this kind, and they are inadequate to supply the need. About 10 per cent of the patients in general hospitals are neurotic or mentally ill. When suitable facilities are available, the demand for specialists increases rapidly. Furthermore, reports on tabes and traumatic brain injury have shown that the usual medical care in general hospitals lacking special departments is inadequate. A loss of interesting case material for the psychopathic hospitals need not be feared, because the hospital departments will continue to be clearing stations. A delimitation of special psychiatric and special neurologic questions is impossible. Neurology is an offshoot of internal medicine but is just as intimately connected with psychiatry. Psychiatrists must have neurologic training, and neurologists must have psychiatric training. What is needed is the training of the younger generation so that they may be equally efficient in psychiatry and neurology. Hence, for the time being, neuropsychiatric departments appear to be required. Fifty beds to each hundred thousand of population would seem to be needed. A department, however, should not have fewer than sixty nor more than from 120 to 150 beds. They must have, in the hospital, the same independent character as other departments. With every department must be associated a clinic to establish relations with the therapeutic centers, to aid the public welfare department and to organize the work of social psychiatry.

Professor Hoffmann of the central bureau of health of the city of Berlin, who is regarded as an authority in the field of hospital administration, has endorsed these demands. He declared that such special departments are to be demanded in the interest of adequate care for neurotic and mentally ill patients and also from the standpoint of general health administration. With special departments in general hospitals it would be possible to diagnose many diseases much earlier. A great deal of the preliminary investigation connected with admissions would be eliminated. Hoffmann recommends departments of from forty to eighty beds to serve a population of 100,000. In spite of the need of a separate building such departments could be created at most general hospitals even with the present restricted funds. The cost for each patient would be higher than in the psychopathic hospitals, although not much higher than in the other special departments. From the financial point of view, the duration of treatment would be considerably shortened by the introduction of special hospital departments.

High Hospital Fees

A reduction in hospital charges is imperative as they have not been adapted to the general downward trend. On the contrary, there has been an increase from about 19,600,000 marks (\$4,664,800) in January, 1900 (\$0.49 per member), to 244,600,000 marks (\$58,214,800), or \$2.88 per member, in 1929 and to 255,300,000 marks (\$60,761,400), or \$3.11 per member in 1931. Economies can be brought about by diminishing the number of patients referred to the hospitals and by shortening the average period of hospitalization.

Professor Jadassohn Honored

The seventieth birthday of Professor Jadassohn, the Breslau *ordinarius* for dermatology and venereal diseases, was celebrated September 10. Jadassohn has still a wide survey of the whole field of his specialty and has advanced the knowledge of many different problems through his observation of new syndromes and his descriptions of various diseases and groups of diseases. He combines in a happy manner the clinicomorphologic method of study with biologic functional analysis. He is known for his aid in the crusade against venereal disease. He counts among his pupils eminent specialists in many countries, some of whom are now occupants of professorial chairs.

Death of Prof. Friedrich Fulleborn

Prof. Friedrich Fulleborn, the occupant of the chair of tropical medicine at the University of Hamburg and the director of the Institute for Tropical Diseases, has died at the age of 67. For thirty years he had been connected with this institute, recently as the successor of B. Nocht, in the capacity of director. He participated in many expeditions to Africa, America and Asia. He devoted himself more particularly to parasitologic and to ethnologic problems.

MADRID

(From Our Regular Correspondent)

Aug. 30, 1933

Prognathism Among European Rulers

Dr. F. Aguilar recently wrote an article on the frequency of prognathism among European rulers. This author, who founded the National School of Dentistry of Madrid more recently established a fund for the support of the University City of Madrid. He is also an honorary professor of various universities. His article is illustrated with a large collection of portraits copied from several galleries of paintings of famous personages of old and modern times. Dr. Aguilar states that prognathism is hereditary. In some cases it may coexist with either physical or mental degenerative anomalies but it is not in itself a sign of degeneration, as some anthropologists state. Prognathism among European rulers is not a characteristic of the Hapsburg family but is a stigma which has been inherited through several generations from King Alfonso VIII, who ruled in Castile from 1158 to 1214. In reviewing the literature, Dr. Aguilar found that Dr. Galippe of the Academy of Medicine of Paris published in 1903, an article on certain hereditary stigmas with especial reference to the frequency of prognathism, insanity and sterility, among European rulers. Galippe considered prognathism a sign of degeneration. Aguilar considers the condition a racial characteristic brought about by the intermarriage of two members of royal families who have the same inherited facial constitution. During the fifty years in which Alfonso VIII ruled in Castile, the prognathic characteristic had not yet appeared among European rulers. This king was the first European ruler who had a projecting jaw. Two grandsons of Alfonso VIII, Ferdinand, king of Castile, and Louis, king of France, had projecting jaws. In Dr. Aguilar's article about eighty pictures of prognathic rulers, including Henry II, king of Castile, his granddaughter Leonora, who married Edward the king of Portugal, Maximilian of Hapsburg, Charles V, John II, Henry IV, and the catholic sovereigns Ferdinand and Elizabeth, are shown. His article includes a historical review of twenty-eight generations of European families for a period of about 600 years. All those rulers were otherwise physically and mentally normal. Dr. Aguilar states that it is possible to determine that Mark Antony, Christopher Columbus, Hernan Cortez, Erasmus, Juan Luis Vives, Voltaire, Wagner, Haydn, Beethoven, Mirabeau, Franklin and some other notables had a projecting jaw.

Dr. Stocker, on the basis of Aguilar's observations, made a study of the anatomic, physiologic and esthetic elements which enter in the structure of the human physiognomy.

Tuberculosis Among Children of Madrid

Dr. T. de Benito Landa and Miss Nieves Barrios in recent lectures reported the results of observations on children at the free antituberculosis dispensary of Madrid and of the Amparo Landa School. All the children of these groups received an injection of 0.0001 Gm. of Koch's old tuberculin. Children who did not react to the test were given a second injection of 0.0002 Gm. If no positive reaction appeared the children were given a third and last injection of 0.0005 Gm. and only when

no positive results appeared after the third injection were the children considered nontuberculous. The speakers stated that 60 per cent of the children of Madrid are tuberculous when entering school. During their stay in the schools, 20 per cent more become tuberculous. Tuberculous patients either at home or in the school, are the most frequent sources of contagion for Madrilenian children.

Deaths of Spanish Physicians

Dr Carlos Maria Cortezo, aged 83 who died recently from renal sclerosis, was a famous physician and philanthropist. Some of the positions which he held were professor of the Faculty of Medicine of Granada, head of the Hospital de la Princesa, director of public health, minister of public education, academican of the National Academy of Medicine of Madrid, and president of the cabinet of ministers in Spain. In reward of his many achievements, the king and queen bestowed decorations on various occasions, including the so-called *el Tolson de Oro*, a decoration which previously had been given only to kings and marshals. Dr Cortezo was the director of *El siglo medico* and a sincere admirer of THE JOURNAL. He was simple in character. He was the founder of the home for orphans of Spanish physicians, for which children used to call him "grandpa." Dr Cortezo is the author of a textbook of pathology, as well as of many articles read before medical and scientific societies. His book entitled *Paseos del Solitario*, in which he describes Spanish habits, places and typical Spanish scenes, is a jewel. He was one of the first physicians who stated that lice are the vectors in the transmission of typhus. On Cortezo's death, Dr Ramon y Cajal the histologist, presented the home for orphans of Spanish physicians with a memorial fund of 25,000 pesetas (\$2,500).

Dr Santiago Recasens, formerly dean of the faculty of medicine of Madrid and professor of gynecology and obstetrics, who retired two months ago on account of his age, recently died. Dr Recasens was a gynecologist and roentgenologist and a well known specialist in the treatment of cancer of the uterus.

Propaganda and the Fear of Poliomyelitis

Much confusion has arisen in Spain by some publicity falsely warning the people against the eating of bananas, which the propagandists claimed spread poliomyelitis. It is believed that the warnings were used as a means of competition among fruit dealers. Nevertheless, the banana crop on the market was not sold which caused a large loss to the dealers. The board of public health has published many articles telling the people how unscientific the idea of blaming bananas for poliomyelitis is and how obvious is the lack of any possible relation of the fruit with poliomyelitis. Fear of an epidemic of poliomyelitis is entirely unjustified, because no case of the disease has been recently reported in any province of the country.

Homage to a Rural Physician

The board of directors of the Colegio de Medicos of Madrid recently gave a banquet in honor of Dr J. Gonzalez of Daganzo, a small town 27 kilometers from Madrid. Some time ago he won the Palanca prize for an article on infantile hygiene in Daganzo during the preparation of which he made a careful study of all children in town. Dr Gonzalez used to make systematic examinations of these school children. The inhabitants of his town are all vaccinated and many of them have been immunized against typhoid. Sometimes he immunized the children against diphtheria. During the last five years he has immunized infants against tuberculosis. He organizes trips to bring to Madrid young men of Daganzo whom he takes to the zoological gardens, to laboratories, to newspaper plants and to other places. During the visits Dr Gonzalez gives the

children lectures, especially on topics of hygiene and on the prevention of diseases in small towns.

New Director of Public Health

Dr J. Bejarano, a well known dermatosyphilologist of Madrid, has been appointed general director of public health. Dr Bejarano is head of the Hospital de San Juan de Dios of Madrid, a substitute professor of dermatology and syphilography in the Faculty of Medicine of Madrid, and president of the Sociedad Dermatologica Española. He has published many articles and has been appointed official delegate at various international congresses of dermatology and syphilology. He was appointed official delegate to the congress against syphilis held at Paris and at Brussels and also official speaker at the congress against cancer held at Barcelona and was head of the Azua antivenereal dispensary for a long time.

Establishment of a Mental Hospital for Prisoners

According to the *Gaceta*, the official organ of the Spanish government, the building that has been devoted to the central prison for women in Alcala de Henares will be transformed into a hospital for patients with mental disease from all the prisons in Spain. The establishment of this hospital was due to a recommendation of the recently appointed psychiatric board, which will control the hospital. A board of sanitation and hygiene to look after the health regulations of prisons will be also appointed.

Explosion of Bomb in Insurance Physician's Home

Dr R. Gutierrez is the physician of a health insurance company which insures workers on construction projects. Some of the insured workers when they suffer even a simple injury claim to be in worse condition than they really are in order to prolong the time during which they do not have to work and for which they receive wages from the insurance funds. Some of the workers have even applied corrosive substances on the lesions to give the impression that the injury was serious. More than thirty insured workers in a month received their salaries under these conditions. The insurance company recently appointed three physicians, one of whom was Dr Gutierrez, to testify on the actual condition of a group of insured members who were still receiving their salaries from the company. The physicians reported that the workers were able to go to work. The latter protested violently and threatened the physicians. A bomb recently exploded in Dr Gutierrez's house. The windows were broken and the walls cracked, but no person was injured. It is believed that the insured workers did this for revenge.

Diplomas and Foreign Physicians

The Colegio de Medicos of Madrid which is the official association of Spanish physicians, recently met to discuss problems related to a probable immigration of German physicians to Spain. Dr Magadan said that a physician whose diploma was validated by Lithuanian, Chilen and German universities recently took the examinations before members of the faculty of medicine of Madrid so as to obtain the right to practice in Spain. The candidate took the examination without the authorization of Dr Sanchez Covisa, the dean of the faculty who then annulled the examination. Dr Piga, president of the medical association, said that as yet no application for validation of diplomas has been presented by German physicians to the dean of the faculty of medicine. Dr Piga read the regulations which he said will be supported by the association in order to avoid the dangers of a greater plethora of physicians. Dr Vallejo said that he is informed that some German physicians have presented applications for validation of their diplomas by the Spanish faculties which applications were presented through an agency in Paris, of a Spanish medical journal.

ITALY

(From Our Regular Correspondent)

Sept 15, 1933

Centenary of the Army Medical Corps

In the military hospitals in Italy, the centenary of the existence of the army medical corps was celebrated with fitting ceremonies. In 1831, military hospitals were established in the Sardinian army, and in 1832 the superior council of health was created. The regulations concerning the personnel and the work of the service were not announced until June, 1833. The personnel, in addition to the superior council consisted of 107 physicians, nine pharmacists and 100 students of medicine. In 1853 was founded the Istituto farmaceutico militare, which is still functioning. The army medical corps has at present the Scuola di applicazione di sanità militare in Florence, departments for the diagnosis of tuberculosis, a military sanatorium (at Anzio), divisional hospitals and garrison infirmaries. Part of the medical officers are required in turn, to attend for two years the various university clinics.

Regulations for the Army Medical Service

The minister of war has revised the regulations pertaining to the army medical service, replacing the regulations adopted in 1903, regulations have also been published pertaining to the instruction in hygiene for the army, the transportation of the wounded, on nurses and sanitary aids and, for the first time on the disinfection and disinfestation services. In course of publication are also the rules for the collection of military statistics, which are designed to replace the regulations established in 1904.

Oral Surgery

The Società italiana di chirurgia della bocca e ortopedia dentofacciale met recently in Rome, under the chairmanship of Professor Zucchi.

Silenzi of Rome explained the relations between arthritic diathesis, glands of internal secretion and diseases of the alveolodental articulation. Alveolodental arthritis of which pyorrhea is a direct consequence, is intimately connected with dysfunction of the endocrine glands and with a disturbed colloidal equilibrium.

Magalotti of Rome in explaining orthodontic treatments called attention to certain dental malpositions which tend to become worse as time goes on especially protrusion of the antero-superior teeth. If one does not resort to surgical interventions he can apply Angle's "ribbon arch" method which requires a longer period of time for the correction.

Rosa of Rome reported a case of epulis. The tumor was in the alveolar cavity of the upper right wisdom tooth, in a patient aged 40. The microscopic examination revealed that the periphery was composed of a stroma of connective tissue with an invasion of round cells while the center was a dense fibrous structure containing numerous bony trabeculae in process of formation.

Piperno of Rome presented a collection of dentures taken from the mouths of patients, in whom, owing to their irrational nature, various disturbances had been caused. This menace is now eliminated since a recent Italian law prohibits dental technicians who are not graduate dentists from applying dentures.

Meeting of Phthisiologists

The phthisiologists about Venice held recently a convention at Udine, under the chairmanship of Professor Grasbarrini.

Fasiani presented a paper on renal tuberculosis. Tuberculous types occurring in the urinary passages have their onset in the kidney following metastatic transportation of bacilli by way of the blood stream. The diagnosis of the nature and the seat of the lesion is difficult. In doing nephrectomy, one must take account of the consequences of the accidental removal

of the suprarenal gland. The record of recoveries is 75 per cent in the unilateral cases, and in some series of cases of early operation it has been 90 per cent. The speaker holds that a person with one kidney removed may be regarded as an individual of normal working capacity.

The speaker emphasized that persons with an open type of tuberculosis of the kidney should be regarded as dangerous the same as patients with open pulmonary types, hence the importance of early diagnosis.

Calzavara attributed fistulas resulting from nephrectomy for tuberculosis to the ureteral stump that remains in the wound area. He has been able to prevent them by applying the retention catheter to his patients operated on.

De Favento presented a study on tuberculous bacilluria of the unimpaired kidneys, a condition which may arise in patients with pulmonary tuberculosis. This fact points to the need of refraining from nephrectomy based solely on the discovery of bacilli in the urine secured by ureteral catheterization.

Biffis in discussing the social problem of tuberculosis advocated instituting a certificate of immunity at least from open tuberculosis in connection with a proposed marriage.

Varisco of Udine reported the results of his observations on the relation between emigration and tuberculosis. He pointed out that the number of persons returning to their former homes when they become affected with specific pulmonary types of tuberculosis is sufficient to influence the tuberculosis morbidity of a given region.

Decline in Mortality from Tuberculosis

According to recent statistics, the mortality from tuberculosis has diminished in all regions of Italy from 156 per hundred thousand of population in 1924 to 108 in 1931 and to 96 in 1932 which constitutes a diminution of about 40 per cent. According to the statistics of the Istituto centrale di statistica the total number of deaths during the first quarter of 1933 was 9,592 in comparison with 11,173 during the first six months of 1932.

Marriages

BRICEY MILTON RHODES to Mrs Eunice Bricey Burns Thornton, both of Tallahassee, Fla. at Pensacola August 22.

HOWE REESE COLEMAN JR Lexington Va. to Miss Virginia Hightower of Montgomery Ala., August 22.

RANDOLPH BRYAN GRINNAN JR Boston to Miss Adelaide Richardson Buist of Brooklyn, August 5.

ROBERT ELMER JOHNSON, Danville, Ill., to Miss Virginia Blunk at Indianapolis August 31.

HYMAN J BURSTEIN Decatur Ill., to Miss Edythe Mae Cohen of Springfield, August 27.

EMMETT B FRAZER Mobile Ala., to Miss Mary Jane Knight of New Albany, Ind. August 29.

GRACE LINE HOFFMAN, Los Angeles, to Mr Oliver Houston of Long Beach Calif. April 21.

CLAUDE DINKINS JOHNSON to Miss Rosalie Kelly, both of Nashville Tenn., August 22.

ROBERT BUCKLEY to Miss Maxine Elizabeth Frix, both of Richmond Va. August 8.

HAROLD E STRICKER to Miss Maxine Elizabeth Cross both of Toledo, Ohio recently.

RAYMOND E HOLBEN Lincoln, Ill., to Miss Ella De Frates of Springfield, August 28.

JOSEPH SANTE DIASIO to DR CLARA DI BENEDETTO, both of New York, in October.

ALBERT D DE HAVEN to Miss Roberta Shaw both of Xenia, Ohio recently.

HAROLD A CONRAD to Miss Lucile Hertzner, both of Cleveland recently.

HUGH L BASS Louisville Ky. to Miss Valeria Edelen August 10.

Deaths

John Staige Davis • University, Va University of Virginia Department of Medicine, Charlottesville, 1889, member of the House of Delegates of the American Medical Association in 1912, instructor in medical biology and pathology, 1893-1894, adjunct professor of pathology and hygiene, 1894-1900 and professor of medicine, 1900-1930, at his alma mater fellow of the American College of Physicians, past president of the Medical Society of Virginia aged 67, died, September 21

Jacob Willard Farrow • Dover, N J, Long Island College Hospital Brooklyn, 1895, member of the Associated Anesthetists of the United States and Canada, formerly member of the board of education, served during the World War, on the staff of the Dover General Hospital, aged 60, died suddenly October 14, of heart disease

Thomas Faith, Chicago, College of Physicians and Surgeons of Chicago, 1893 member of the Illinois State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology, on the staff of the South Shore Hospital, aged 61, died, October 16 of arteriosclerosis and cerebral hemorrhage

Michael Schiller, New York, Columbia University College of Physicians and Surgeons, New York 1896 member of the Medical Society of the State of New York aged 60 on the staffs of the Harlem Hospital and the New York Post Graduate Medical School and Hospital, where he died, October 5

Herbert Eugene Smith, Los Gatos Calif University of Pennsylvania School of Medicine, Philadelphia, 1882, instructor of chemistry, 1882-1885, professor of chemistry and dean 1885-1910 and since 1910 emeritus professor Yale University School of Medicine, New Haven, Conn aged 75, died, October 9

William Edgar Bates, Centerport Pa, Jefferson Medical College of Philadelphia 1886, member of the Medical Society of the State of Pennsylvania aged 67 died, September 16, in St Joseph's Hospital, Reading, of sclerosis of the coronary arteries and heart disease

Nelson B. Oliphant • Trenton, N J, University of Pennsylvania School of Medicine, Philadelphia, 1880 past president of the medical board and formerly on the staff of the Mercer Hospital aged 76 died July 16, in Southport Me of acute intestinal obstruction

Charles Amedee Robert, St Hyacinthe Que Canada, School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1899 aged 61 died, September 5, of nephritis and cerebral hemorrhage

Frank Light, Ottawa, Ohio Columbus Medical College, 1883 member of the Ohio State Medical Association formerly member of the board of education and county health commissioner, aged 72, died September 27 of cerebral hemorrhage

Fletcher Johnson Towler • Lyons N Y Harvard University Medical School Boston 1921 bank president and president of the board of education aged 38 died October 8, in a hospital at Cleveland, of peritonitis following an operation

Edgar W Boardman • Parsons Kan, Hahnemann Medical College and Hospital, Chicago 1884 past president of the Labette County Medical Society on the staff of the Mercy Hospital aged 69 died September 22 of heart disease

John Alvin Orr, Jr, Addis Ababa Abyssinia Africa University of Pennsylvania School of Medicine Philadelphia 1929 medical missionary aged 30 on the staff of the George Memorial Hospital, where he died September 17 of typhus

John L Van Dyke, Paris Texas University of Louisville (Ky) School of Medicine 1883 member of the State Medical Association of Texas, on the staff of the Sanitarium of Paris aged 75 died September 9 of cerebral hemorrhage

Minnie Crouch Dunlap Lexington Ky Southwestern Homeopathic Medical College and Hospital Louisville 1899 for many years on the staff of the Eastern State Hospital aged 75 died October 2 of carcinoma of the colon

William Frederick Smith Boise Idaho Medical College of Virginia Richmond 1886 member of the Idaho State Medical Association formerly on the staff of St Luke's Hospital aged 68 died September 9 of heart disease

Oliver Boyd Medicine Hat Alta, Canada McGill University Faculty of Medicine Montreal Que 1903 chairman of the board of education on the staff of the Medicine Hat General Hospital aged 60 died July 18

Marena L B Drescher, Michigan City, Ind, Northwestern University Woman's Medical School, Chicago 1890, member of the Indiana State Medical Association, aged 56, died October 7, of organic heart disease

William Wallace Gray, St Joseph, Mo Ensworth Medical College, St Joseph, 1904 member of the Missouri State Medical Association, formerly city health officer, aged 61 died October 7 of cerebral hemorrhage

Julius H Cameron, Haldton, Okla (registered in Oklahoma by state board of health under Act of 1908) member of the Oklahoma State Medical Association aged 48, died, September 6, of cerebral hemorrhage

L P Napoleon Leduc, Somersworth N H School of Medicine and Surgery of Montreal Faculty of Medicine of the University of Laval at Montreal, 1890, aged 70, died, August 25 of carcinoma of the stomach

William K Powis, Chicago Chicago Medical School, 1928 member of the Illinois State Medical Society, aged 42 on the staff of the Burnside Hospital where he died, October 8, of acute intestinal obstruction

John Lauchlan Martin, Miami Beach Fla, Western Pennsylvania Medical College Pittsburgh, 1903 veteran of the Spanish-American and World wars, aged 57, died, September 9 of angina pectoris

Victor Lopez, New York, George Washington University School of Medicine Washington, D C, 1925 on the staff of the Wickersham Hospital aged 32, was killed October 6, in an automobile accident

Willie R Booth, Campbellton, Fla, Tulane University of Louisiana Medical Department New Orleans, 1888, aged 69, died September 11, in the Moody Hospital, Dothan, Ala, of strangulated hernia

Marc Aurele Drapeau, Rimouski Que Canada School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal 1900 aged 57, died August 21

James H Johnson, Las Cruces N M (licensed New Mexico 1901) member of the New Mexico Medical Society, aged 65, died, September 28 of abdominal hemorrhage and peritonitis

August C Wunnicke, Kansas City Mo, University Medical College of Kansas City, 1893, aged 66 died September 26 in the Wesley Hospital of uremia, pelvic abscess and carcinoma

James W Brunker, Riley Ind, Medical College of Indiana Indianapolis 1884 member of the Indiana State Medical Association aged 75, died October 9, of toxic goiter

William Clyde Doughty, Dayton Ohio Ohio Medical University Columbus 1901 member of the Ohio State Medical Association aged 58, died, October 9 of heart disease

Henry Herbert White, Enterprise Ala, University of Alabama Medical Department Mobile, 1905 aged 52, died October 1 of injuries received in an automobile accident

Aaron David Heineman, Memphis, Tenn University of the South Medical Department, Sewanee 1909, aged 63 died September 23, of uremia and chronic interstitial nephritis

Andrew Franklin Matthews, Brookeland Texas (licensed Texas, under the Act of 1907) aged 72, died September 22, in the Hardy-Hancock Hospital Jasper, of pneumonia

Ewing L Collier, Flint Mich Kentucky School of Medicine Louisville 1892, member of the Michigan State Medical Society aged 63, died, October 9 of heart disease

William Joseph Doss, Whitewright Texas University of Louisville (Ky) School of Medicine 1891 aged 64 died, June 24 of enlarged prostate and chronic cystitis

Margaret Josephine Mackey, Jersey City N J Columbia University College of Physicians and Surgeons New York, 1923 aged 36 died September 25 of carcinoma

Walter Lamson Kelso • Hillsboro N H University of Vermont College of Medicine Burlington 1905 aged 61, died September 13 of heart block and hypertension

Charles Corwin Funk, Smith Center Kan Central Medical College of St Joseph Mo 1900 aged 59 died September 10 of obstruction of the mesenteric artery

Benjamin Butler Jeffers • Steadton Pa Howard University College of Medicine Washington D C 1897 aged 60 died September 30 of chronic nephritis

Louise Amanda Griffin Boulder Colo Boston University School of Medicine 1889 aged 76 died June 22 of myocarditis and fracture of the femur due to a fall

Samuel Hahnemann Anderson, Kansas City Mo., Homeopathic Medical College of Missouri, St. Louis 1876, aged 83, died September 18, of chronic myocarditis

George Ira Armitage Ⓢ Murray, Iowa Keokuk Medical College, 1897, past president of the Clarke County Medical Society, aged 61, died, September 10

Girionza L. Wyatt, White Sulphur Springs W. Va. College of Physicians and Surgeons Baltimore, 1903, aged 55, died, October 1, of angina pectoris

Adolph Stierle, Jr. Ⓢ St. Paul, University of Minnesota Medical School, Minneapolis, 1901, aged 65, died August 8, of chronic rheumatic endocarditis

Gundemar Neggo Ⓢ Detroit University of Dorpat, Esthonia 1918, aged 45, died, September 26, in St. Joseph's Mercy Hospital, of empyema

Sarah Adelaide Hall, Watertown, Mass. Boston University School of Medicine 1884, died, September 25 in St. Petersburg Fla., of heart disease

Myron H. Chamberlin, Los Angeles Pulte Medical College Cincinnati, 1878, Civil War veteran, aged 88, died, September 25, of heart disease

John P. Green, Eldorado Springs, Mo., American Medical College, St. Louis, 1889, aged 77, died September 23, of cerebral hemorrhage

C. C. Alexander, St. George N. B. Canada McGill University Faculty of Medicine, Montreal, Que., 1895, died August 23 of heart disease

Clement Frechette, Leominster, Mass. (licensed in Massachusetts by years of practice), aged 64 died, September 27, of arteriosclerosis

Simon D. Hildt, Bolivar, Ohio Miami Medical College Cincinnati 1874 aged 83 was found dead in bed, October 3, of heart disease

John A. Gregory, Alexandria Pa., Jefferson Medical College of Philadelphia, 1883, aged 84, died, September 6, of arteriosclerosis

Henry Primm, Ravenna, Ohio, Homeopathic Hospital College, Cleveland, 1893 aged 64, died, September 2, of pulmonary edema

Charles Bridges, Tatum, N. M. Memphis (Tenn.) Hospital Medical College, 1894, aged 66, died June 2, of heart disease

Samuel Day, Holden, Mo. Physio Medical Institute Cincinnati, 1875, aged 86, died, August 6, of chronic myocarditis

Asher Bleiman, New York University of the City of New York Medical Department, 1892, aged 65, died August 24

William Ryland Gwathmey, Ruark, Va. (licensed in Virginia in 1899), aged 63, died, August 25, of hepatic cirrhosis

Charles Anderson Lanier, Henderson Texas, Eclectic Medical Institute, Cincinnati, 1899, aged 65, died in August

Charles X. Jones, Ray City, Ga., University of Georgia Medical Department, August, 1898, aged 62, died, August 3

John P. Adams Ⓢ Boston, University of Vermont College of Medicine, Burlington, 1898, aged 69 died, August 17

Samuel Beasley Grimes, Cincinnati Cincinnati College of Medicine and Surgery, 1890, aged 66, died, August 14

Alvin H. Clifford, Dry Ridge, Ky., Cincinnati College of Medicine and Surgery, 1889, aged 85, died, August 28

Thomas Clark Lapp, Cobourg, Ont., Canada, Trinity Medical College, Toronto, 1886, aged 73 died, August 20

Wallace Eugene Hubbard, Boston Harvard University Medical School, Boston, 1904, aged 52, died, August 1

Simon Pomeroy Brooks, New York, Tufts College Medical School Boston, 1897, aged 65, died in August

John A. Garrett, Reader, W. Va. (licensed, West Virginia, under the Act of 1881) aged 87 died, August 20

James Herbert Smith, Amsterdam Ga. Missouri Medical College St. Louis 1887 aged 69 died August 15

W. R. Settle, Knoxville Tenn., Meharry Medical College Nashville 1895, aged 66, died, August 5

CORRECTION

Cause of Death—The cause of death of Dr. Fred McCandless of Ludington Mich. which was published in THE JOURNAL October 21 page 1332, should have been stated to be muscular atrophy

Bureau of Investigation

KOLLOYD

Another Fraudulently Exploited "Ulcer Cure"

The postal authorities have recently declared the exploitation of a product known as 'Kolloyd' as a "scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises" and have closed the mails to the business.

Kolloyd was put on the market by what was first known as Kolloidal Research Laboratories, Inc. This concern was incorporated under Illinois laws April 30, 1931, the names of the incorporators being, according to the record, A. C. Linen thal, C. T. Myles and G. Kaplan, all of 127 North Dearborn Street Chicago. On Feb. 8, 1932, the name was changed to Kolloyd Laboratories, Inc. Under its earlier name the company did business from 1352 Madison Park Chicago but it was not listed in the Chicago telephone directory. The stationery however, gave its telephone number as Kenwood 0760 investigation disclosed that this was the home address and telephone number of one Ignatius Barnard.

STOPS ACID PAIN IN 3 MINUTES

STOMACH

ULCERS HEALED IN 3 WEEKS

Sooner or later you will wake up to the fact that soda, magnesia, bismuth, sippy powders and alkaline tablets bring back MORE acid than you had to start with—the more you take the sicker you will be. Investigate the KOLLOYD treatment which carries the acid OUT of the body—which spreads a protective coating over stomach and duodenum. Not a drug, acts mechanically. Made 10,000 chronic sufferers well in past year. Trial box and booklet of testimonials letters free. Address:

KOLLOYD LABORATORIES
Dept. 112-C-3325 Michigan Blvd., Chicago

WRITE FOR FREE BOX OF *Kolloyd*

According to a report received in February, 1932, the company had for its president Ignatius Barnard, with Jeanette L. Barnard, his wife, as secretary and treasurer, M. T. Horwich as vice-president, and Henry Posner as a member of its board of directors. Ignatius Barnard was, but apparently is no longer, connected with an advertising agency. As this department of THE JOURNAL has repeatedly pointed out, the most important asset for the commercial exploitation of a "patent medicine" is a knowledge of advertising. A knowledge of medicine, pharmacy or chemistry is quite unnecessary. The two men, Horwich and Posner, were reported to be respectively, president of a printing concern and a mortgage banker. By 1933 the company had apparently become a closed corporation, for the names of the officers and directors filed in a report to the Secretary of State of Illinois in February of this year were Ignatius Barnard, President and director, Ruth Barnard, Secretary and director, and Jeanette L. Barnard, Treasurer and director.

The Hon. Karl A. Crowley, Solicitor for the Post Office Department in an extensive memorandum to the Postmaster-General recommending the issuance of a fraud order against this concern, brings out some interesting facts regarding this piece of quackery. The memorandum states that the concern was organized by Barnard and his wife and two others whose names have not been disclosed but who furnished the capital. At the hearing held in Washington—a hearing that occupied nine days and a transcript of the record of which comprised over 800 typewritten pages—Barnard admitted that he held no degree as a chemist and that his knowledge of therapeutics was limited to such information as he claimed to have acquired by having consulted doctors regarding his own case and the reading of medical works on the treatment of gastro intestinal

ulcers The Solicitor reports, further, that Barnard had had about twenty-five years' experience in writing advertisements, including especially the preparation of advertisements for "patent medicines" Barnard admitted writing the copy for his Kolloyd nostrum Barnard also claimed to have suffered from ulcers of the stomach for twenty-eight years and to have been unsuccessfully treated by several physicians, but claimed to have been cured by the use of a product containing colloidal hydroxide of aluminum He admitted, however, that he still has recurrences of his trouble

Kolloyd has been sold in two forms—a tablet and capsule It consisted of about equal amounts of aluminum hydroxide and milk sugar

The Bureau of Investigation has accumulated an extensive collection of advertising and particularly the follow-up letters put out both under the name of Kolloidal Research Laboratories, Inc., and Kolloyd Laboratories, Inc. In a four-page letter signed by Ignatius Barnard and reproduced in imitation typewriting, Barnard purports to tell of his own experience In the first page of this letter he declares that he had been treated by some of the best physicians in the United States both individually and in clinics, but without success Barnard then continues

So I went to Europe—hoping I could find something there And I did In Vienna I met Prof Temple—72 years old—a famous portrait painter I noticed he kept a little roll of tablets in his pocket and every once in a while he took one. I was dieting—afraid to eat—or drink—or smoke He laughed at me, listened to my story—and told me—he too had ulcer and hyperacidity for over 20 years—he had had an operation—the trouble came back—and a physician finally told him about those little tablets

Believe it or not—I was comfortable in a few minutes after taking a couple of these tablets Half an hour later the pain came back and I took a couple more and became comfortable again This time I had no pain by the time the next meal rolled around and by taking the tablets I didn't have any

To make a long story short I brought these tablets to America I call them KOLLOYD tablets They are Colloidal Hydroxide of Aluminum I have given them to hundreds of my friends—and some of the recoveries sound like fairy tales

Not only do "some of the recoveries sound like fairy-tales," but this entire yarn was a fairy-tale At the hearing Barnard admitted that he did *not* go to Europe that he *never* met Professor Temple that he *never* obtained any tablets from him, and that he *never* brought any tablets to America!

In all of the elaborate advertising and high-pressure salesmanship on Kolloyd, the changes are rung on the thesis that by the taking of Kolloyd a person can cure a stomach ulcer in three weeks At the Washington hearing Barnard attempted to deny that the advertising was intended to convey such an idea Even the medical expert employed by the Kolloyd concern to testify at the hearing had to admit that the shortest length of time in which he had observed an ulcer to be thoroughly healed was over two months The government brought out at the hearing that medical authorities are generally agreed that, in the healing of a peptic or duodenal ulcer next to diet and rest, the time element is of prime importance and that the usual period of healing is one of several months' duration Even in such cases it is pre supposed that the patient has been properly hospitalized or that his regimen of rest and diet is under strict scientific supervision

In some of its advertising the Kolloyd concern published what the public could not help but believe was a testimonial credited to "Drs Einsel and Rowland Ohio The facts are that the quotation was a garbled combination of several sentences from an article published by Drs I H Einsel and V C Rowland of Cleveland Ohio on 'The Aluminum Hydroxide Treatment of Peptic Ulcer' that was published in the *Ohio State Medical Journal* March 1932 Barnard left out of the quotation all statements that would contradict the Kolloyd misrepresentation The actual statement made by Drs Einsel and Rowland in their article follows The words put in italics were left out in the Kolloyd advertising

So far we have treated thirteen cases of duodenal ulcer for an average length of time of five months They all responded promptly and have had complete symptomatic relief There have been no failures in this small series of aluminum hydroxide cream cases There have been no side reactions to the drug, no vomiting or toxic symptoms or complications of any kind

Blood analysis shows practically no absorption of aluminum hydroxide or aluminum hydroxide cream in the acid-base balance There is no evidence of toxic action upon kidneys or other organs

Obviously the matter quoted by Barnard did not represent the opinions of Doctors Einsel and Rowland but was garbled to suit Barnard's purpose He eliminated all reference to the five months' period of treatment and the fact that no "cures" were reported, but only symptomatic relief, because such reference would have given the lie to the claim that Kolloyd would cure ulcers in three weeks

It was further brought out at the hearing that Barnard's concern emphasized in its advertising that "you can eat practically everything as soon as you start the Kolloyd treatment" and that "no dieting is necessary" Yet, those who sent money for Kolloyd received a pamphlet containing a list of foods they were told to avoid! It was brought out, too, that while the advertising claimed that Kolloyd was not a "patent medicine" the evidence shows that apparently the only reason it was not a "patent medicine" was that Barnard had been advised by his attorneys that as another similar preparation had already secured the patent, it would be inadvisable for him to apply for a patent, as it was not likely that he would succeed in obtaining it Evidence was also submitted to show that Kolloyd, which sold through the mails for \$2 a box, was of the same composition as another preparation which could be bought in drug stores for 75 cents

In view of the facts already dealt with and others referred to in the memorandum, the Solicitor recommended the issuance of a fraud order against the Kolloidal Research Laboratories, Inc., the Kolloyd Laboratories Inc., and J L Barnard Manager Postmaster General Farley closed the mails to this concern June 28 1933

Correspondence

BERYLLIUM RICKETS

To the Editor—Your editorial on beryllium rickets in the issue of September 30 completely overlooks—as did the Canadian investigators you cite—a very important fact that may invalidate your conclusions This is that beryllium has distinct radioactive properties, as has been proved at the California Institute of Technology

The bone lesions observed may indeed resemble rickets, but it would seem that they may also have quite as much resemblance to the bone lesions following the ingestion of minute quantities of radium compounds or other radioactive substances The alteration in blood plasma may be due, as suggested, to precipitation of phosphates by beryllium ions, but radioactivity is also damaging to blood plasma

Without any intention of reflecting on the work of these investigators, it may be said that the research can hardly be called conclusive, and such a term as "beryllium rickets" cannot be justified until the possible effects of beryllium's radioactivity have been thoroughly examined

JOHN G HANNA Dunedin Fla

RESEARCH ON VITAMINS AND HORMONES

To the Editor—I chanced to read the report by your Berlin correspondent entitled 'Research on Vitamins and Hormones' (THE JOURNAL, September 9, p 867) shortly after having consulted the original paper by Kuhn and collaborators (*Ber d Deutsche Chem Gesellsch* 66 B, 1034) Kuhn gave evidence that the antipellagra factor is not identical with the hachromes and referred to the work of P G6rg6s who designated the antipellagra factor vitamin H

Further since evidence has been accumulating in recent years that the vitamin B complex contains two or more factors in addition to B₁ it may not be entirely correct to hold that a further colorless factor derived from yeast (complementary to the hachromes) was previously unknown Whether

"vitamin H" is a component of this particular yeast fraction is not clear, since Gyorgy's report is not yet available to me. However, Kuhn pointed out that purified "vitamin H" is colorless. Finally, it is questionable whether crystalline lactoflavin, alone, should be called "vitamin B," since B generally is estimated on the basis of growth-promoting effectiveness. Notwithstanding, the work of Kuhn and others appears to be the first successful step toward elucidating the chemistry of the vitamin G complex, knowledge of which heretofore has lagged behind that of vitamins A, B₁, C and D.

W. A. PLABODY, PH.D., Richmond, Va.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

TREATMENT OF WASSERMANN FAST SYPHILIS

To the Editor—I am trying to get information on the approved effective treatment of Wassermann fast cases. The use of milk injections such as aolan and autotransfusions has been suggested to me but the proper technique and its use in relationship to the arsenicals were not explained. I have reason to feel that an injection of milk the day prior to an intra-venous arsenical would provoke a terrific reaction with chills and fever. I believe that the autotransfusion would probably give the same result. I wish you would kindly send me the desired information and also your opinion regarding the reactions I have referred to above when milk or autotransfusions are used the day prior to an intravenous injection and the proper technique. Can these measures be also used effectively in connection with the administration of bismuth? Please do not publish my name.

M. D. Colorado

ANSWER—The therapeutic efforts for Wassermann fastness suggested by the correspondent put the cart before the horse. Before one can discuss intelligently the treatment for this condition, one must have much more information as to its probable cause. Wassermann fastness is a frequent accompaniment of all types of late syphilis. In many instances if not in all, it is an expression of the sensitivity of the serologic test employed rather than an indicator of persistent lesions in the patient. It is, however, particularly associated with cardiovascular and visceral lesions, with late bone lesions, with certain types of central nervous system syphilis, and with late congenital syphilis.

In dealing with this situation, the important thing is not to attempt various modifications of treatment procedures in order to reduce the Wassermann reaction to negative but to investigate the patient thoroughly to find out what is keeping the test positive. If the original examination has not disclosed the presence of a lesion in one of the organs or systems enumerated, complete physical reexamination should be performed with careful emphasis, particularly on the cardiovascular, osseous and central nervous system. Teleroentgenographic examination of the cardiovascular area should be carried out to make sure that aortic dilatation has not been overlooked in the physical examination. The accessible bones should be carefully palpated and any roughening or thickening checked by roentgen examination. The spinal fluid must be examined. Neurosyphilis may be asymptomatic rather than clinically apparent. Not until after the performance of such a searching physical and laboratory examination is it profitable to discuss the treatment of Wassermann fastness.

If the apparent cause of the persistently positive blood test is cardiovascular syphilis, visceral syphilis or neurosyphilis the proper treatment to be instituted is the treatment of these conditions and no attention whatever need be paid to the question of ultimate reversal of the blood Wassermann reaction. The desideratum of treatment is not to render the Wassermann reaction negative but to relieve symptoms, prevent clinical progression and prolong life. If these three aims can be accomplished it makes no difference to the patient or his physician whether the Wassermann reaction is positive or negative.

If the apparent cause of Wassermann fastness is cutaneous, osseous or late congenital syphilis and if no evidences of cardiovascular, visceral or nervous system involvement are present, the patient may be regarded as in the same category as Wassermann fast patients with latent syphilis. Obvious lesions, if present, almost always heal promptly and relapse is no more

frequent than in patients who are not Wassermann fast. Treatment may proceed, therefore, not on the basis of lesions actually detectable (as in cardiovascular syphilis, visceral syphilis or neurosyphilis) but on the basis of a suspicion that, because of the Wassermann fastness, such potentially grave lesions may be present but below the level of clinical recognition. The treatment of the Wassermann fast patient with late congenital, osseous or latent syphilis is thus prolonged not because of lesions which the patient actually has, but because of lesions which, if untreated, he may develop. It is customary in many clinics to treat such patients continuously with the arsenphenamines and a heavy metal in alternation for a minimum period of two years. No special attempts are made by utilizing other than the usual drugs, by intensification of treatment, or by the adoption of such nonspecific measures as fever therapy, to bring about reversal of the Wassermann reaction.

On the completion of two years of treatment, the patient is placed on probation just as if his serologic response had been more satisfactory. Subsequent observation both from the serologic and the clinical standpoint, is rigidly insisted on. Periodic physical examination throughout life is essential, with special emphasis on the cardiovascular apparatus. Curiously enough in the benign types of Wassermann fastness, especially in latent but also in osseous and late congenital syphilis there is a definite tendency for the Wassermann reaction spontaneously to become negative after the cessation of treatment.

The significance of Wassermann fastness for the patient's future course is not as yet certain. In cardiovascular and neurosyphilis, it is probably of no special importance. Progression in spite of treatment or a favorable response to treatment are equally common in patients Wassermann fast and in those in whom reasonably prompt Wassermann reversal is secured. In these two conditions what happens to the blood Wassermann reaction is of little importance as compared to relief of symptoms, clinical arrest and prolongation of life. In neurosyphilis the response of the blood Wassermann reaction is vastly less important than the response of the spinal fluid. In latent, late osseous and cutaneous, and in late congenital syphilis relapse of the original lesion or the fresh appearance of new lesions is no more frequent in patients Wassermann fast than in those who are not and in either case negligible if treatment has been prolonged for two years.

There is no rational reason for the use of milk injections, aolan or autotransfusion in this situation. Such injections given a day previously to the use of an intravenous arsenical would not, however, increase the reaction that might be caused by the arsenical.

PAROXYSMAL AURICULAR FIBRILLATION

To the Editor—An obese woman aged 52 has had several surgical operations on the abdomen. She is subject to attacks which I have interpreted as paroxysmal fibrillation. Between these attacks there is no evidence of heart disease except a moderate increase in the area of cardiac dullness which is in keeping with an obese habitus and exaggerated by a high diaphragm. The blood pressure between attacks is 180 systolic 125 diastolic. The first attack occurred two years ago after a cholecystectomy. There have been several subsequent attacks at irregular intervals. There is no history suggestive of earlier heart disease except the moderate hypertension. During attacks the apical rate is about 140 as nearly as it can be counted. The heart action is completely irregular as to force and rhythm with marked pulse deficit. At these times there is considerable dyspnea and cyanosis. I have seen the patient in but two of these attacks but precordial pain made its first appearance with the last. This did not respond to vasodilators but did subside with the attack several hours later. The attacks start suddenly and end quite as suddenly under intensive digitalization within six to eight hours. The two attacks which I observed were separated by an interval of four months. It was unnecessary to give digitalis up to the calculated physiologic dose in either instance. On cessation of an attack, the resting pulse rate becomes 68 and is perfectly regular.

H. W. DORR, M.D., Ashton, Idaho

ANSWER—Paroxysmal auricular fibrillation in a heart that is apparently normal is probably of minor significance of itself and such patients may attain their normal expectancy as far as the heart is concerned. There is some reason for supposing that such cases occasionally occur in hearts without any organic pathologic changes. Frequently these recurring paroxysmal attacks are associated with gastro-intestinal disorders. That such cases of paroxysmal auricular fibrillation may occur without evident pathologic changes does not alter the fact that these should always be suspected. When the attacks are so far apart, they may as well be left alone as far as medication is concerned. An attempt should be made to determine just what factors predispose to the attacks and the attacks should be avoided as far as possible. Bed rest, with possibly some mild sedative, is usually sufficient for the attack. Digitalis is usually

cessary, as the attack will usually subside with rest alone is reason for thinking that digitalis may occasionally perpetuate an attack that otherwise would be temporary attacks become frequent, a daily dosage of quinidine may be used to prevent their recurrence. Doses of 4 to 1 Gm or more daily, if necessary, should be used attacks as infrequent as they are in this case, this is not

NONEMERGENCY SURGERY IN PATIENTS WITH UNTREATED SYPHILIS

Editor—I should like to know the consensus concerning the use of nonemergency operations, such as uncomplicated hernia, formed on a patient with untreated syphilis as shown by a four sermann and Kahn test

P H KENNEDY M D, Youngstown Ohio

ANSWER—In general it is accepted as inadvisable to perform nonemergency operations on patients with untreated syphilis prior to a careful investigation of the status of the syphilitic infection and, if indicated, necessary preliminary treatment. The reasons for this position include the enormous amount of risk to which surgeons and operating assistants are subjected by operations on patients with early syphilis in which a spirochetemia is present as well as risk associated with local infectious lesions. Operators dealing with the oral and nasal cavities and the anus and genital regions are particularly subject to risks on this score. Every positive Wassermann reaction in a patient in whom such an operation is contemplated should lead to a proper examination for the status of his syphilis and the patient should be subjected to preliminary sterilizing treatment. When, in later infections, complications of the nervous system are recognized, symptoms may not infrequently follow the shock of operation, producing a most disconcerting and sometimes serious group of unnecessary complications. The matter of healing of operative wounds in patients with uncomplicated syphilitic infection has been investigated by Goeckerman and others and these studies have shown that risk of nonunion or gummatous infiltration of the operative wound is extremely small. Nevertheless it does sometimes occur, particularly in patients who present unrecognized cutaneous lesions of a gummatous type at the time the operation is performed. In even so apparently remote a field as tonsillectomy in patients with untreated prenatal syphilis the proportion of severe scarring following gummatous infiltration and destruction of the pillars uvula and soft palate is a definite and serious risk. Operations on the nasal septum in patients with positive Wassermann reactions also may lead to extensive bone destruction instead of healing with collapse of the nose, saddle deformity and serious disfigurement.

In view of all these facts the statement stands, therefore, that syphilologic investigation and appropriate treatment is called for in patients with four plus Wassermann and Kahn reactions prior to the performance of nonemergency operations

PROPHYLAXIS OF LEAD POISONING IN PAPER MILLS

To the Editor—I have under my care a group of men in a pulp and paper mill who work in the digester room handling litharge. I am using all measures possible to prevent the men from getting lead poisoning. I should like to get your advice concerning the giving of small doses of potassium iodide at intervals as a prophylactic measure. Would there be any contraindication to the giving of potassium iodide? I have been giving these men frequent physical examinations and likewise doing blood examinations especially watching for stippling. The urine examination for lead is rather hard to carry out as a routine procedure. Could you tell me any simpler methods? I should appreciate any suggestions that you may give. Please omit name

M D Wisconsin

ANSWER—At present there is diversity of opinion as to the preferable medical care of persons who may be absorbing lead and who may shortly present clinical lead poisoning.

The work of Kehoe and his associates apparently maintains the undesirability of the administration of any substances for the purpose of chelating. The promotion of chemical lead poisoning is thus believed to be favored. In keeping with the trend of this work all effort should be made to prevent the development of lead poisoning but when such does arise chelating should be left to physiologic processes. Removal from further exposure is likely to be followed by the slow natural elimination of the greater portion of the lead during several ensuing months.

Contrary to this concept the work of Aub and his associates favors the use under carefully supervised conditions of diverse medicaments and procedures conducive to the hastened elimination of lead from the body. In view of this situation no unreserved recommendations should be made at this time with

respect to that part of the query related to the use of potassium iodide. For persons well protected against lead intake and whose personal hygiene as to diet, constipation and so on is proper, the use of potassium iodide seems unwarranted. More is to be expected from the control of exposure, the prevention of ordinary gastro-intestinal disturbances, careful monthly physical examination, with weekly physical inspections and interrogation, the rotation of services in this department, and the elimination of workers prone to infections and gastro-intestinal upsets. An occasional examination of the urine for lead is of dubious value. The technic is long and the opportunities for errors are many.

Routine blood examinations are valuable but not definitive. Most may be expected from a regimen involving dependence on no one test but on the combination of several, including blood changes, weight status, and results of interrogations of workers as to manifestations. Much information may be found as to the significance of trivial deviations from the normal in "Lead Poisoning" Report of Committee on Lead Poisoning, American Public Health Association, 1930.

ACETYLENE WELDING AND METAL FUME FEVER

To the Editor—I have a patient an acetylene welder who on July 6 after getting a considerable amount more than usual of fumes on July 5 and 6 became completely exhausted. A severe pain developed in the lower right thoracic and right lumbar region. The temperature ranged from 101 to 102 F and there was persistent coughing with expectoration of a considerable amount of bright red blood. Auscultation showed distant breath sounds in the right lower lobe and absence of breath sounds in the right axilla. A phlebitis of the left leg and then of the thigh developed. The urine showed a trace of albumin and a few hyaline and granular casts. Leukocytes numbered 11,750 polymorphonuclears 74 per cent. He gradually improved but continued to expectorate blood until August 9 when an intense pain developed in the left side of the chest the fever rose to 103 and the leukocytes numbered 16,000 with 90 per cent polymorphonuclears. Auscultation showed a slight pleuritic rub in the left axillary line at about the fifth sixth and seventh ribs. There was almost total absence of breath sounds in the upper half of the lower left lobe. On the 12th he expectorated about an ounce of dark foul smelling blood and continued to expectorate small amounts of blood of the same character for several days when the blood again became bright red. The sputum has been examined four times and was negative for tubercle bacilli. The patient's temperature has been normal for five days but on the 26th he began to complain of pain in the right lung again. Is this condition probably occupational? What is the prognosis? Please omit name

M D, Mississippi

ANSWER—This inquiry should have furnished information as to the type of metal being welded. The condition described is not characteristic of the action of acetylene or of any of its more frequent impurities. It is not entirely characteristic of metal fume fever and probably is not entirely related to occupation as to the cause.

Hydrogen arsenide (arsine) and hydrogen phosphide (phosphine), together with carbon monoxide and all possible impurities in acetylene, occasionally lead to their characteristic actions on exposed acetylene welders.

Metal fume fever is more often encountered following work with galvanized material or with metal otherwise containing zinc.

Secondary infectious processes of the respiratory tract, after minor attacks of metal fume fever, are known. It is possible that the condition described is wholly unrelated to work.

FRIGIDITY IN WOMEN

To the Editor—Will you kindly give me information on the following problem. A white woman aged 23 married one year has never experienced orgasm during sexual intercourse. She is an active healthy woman. Physical examination shows no abnormalities of the genitalia. She states that at no time during her life has she ever had any sexual sensation. There are no psychic factors that disturb her. Is there anything to be done to remedy the condition. Please omit name

M D Kansas

ANSWER—It is not at all unusual for a modestly brought up woman to experience neither sexual desire nor orgasm during the first year of married life. Many cases however, may be due to the husband who may be suffering from premature or rapid ejaculation thus getting through with the coital act before the wife has had a chance to come to orgasm. In other cases awkward coitus on the part of the husband may cause both painful coitus and lack of orgasm. It should be determined whether the wife during the period of engagement experienced any sexual pleasure during the spooning. If she did it shows that the sexual sense is not absent but has not yet been awakened during coitus. Many of these women experience pleasure from masturbation either by themselves or if done by the husband. In such cases the sexual centers in the brain which are in connection with the external genitals

Dr. Robert Bell, Librarian

E. M. & Medical College

have been developed at the expense of those areas in the brain connected with the internal genitals. In the latter cases there is sometimes found a marked diminution of sensation in the vaginal mucous membrane. The treatment for the condition just mentioned is giving up the practice of masturbation and indulging in regular sexual intercourse and treatment of the insensitive vaginal mucous membrane by the galvanic sinusoidal current with a vaginal electrode as suggested by Huhner (Diagnosis and Treatment of Impotence in the Male and Female, *Am Med* 27 144 [April] 1932). Of course there are cases of absolute congenital frigidity for which nothing can be done. These cases are however, comparatively infrequent and should be examined with a view of determining the possibility of hermaphroditism, homosexuality or other inversion.

CEPHALEMATOMA IN INFANT

To the Editor—A woman aged 18 has just brought to me her first baby who is 3 months old. She states that she was in labor about thirty hours and that there was an immense erupt succedaneum over most of the upper and posterior surface of the baby's head following birth. At present there is over the right parieto-occipital region quite an elevated area extending anteroposteriorly about an inch in elevation at the maximum height and 3 inches long. This is of bony hardness and firmness. What would you advise for this condition? Please omit name.

M D South Carolina

ANSWER—Cephalatomas are said to occur about once in every 200 deliveries. The condition is sometimes associated with hemorrhages in other organs, which may be due to the hemorrhagic diathesis. The hemorrhage that constitutes the cephalematoma is usually situated over one of the parietal bones, rarely over the occipital, frontal or temporal bones. As a rule the tumor mass is not observed until the second or third day of life, though the blood continues to extravasate or the mass increases. About the end of the first week a hard ring appears about the periphery of the mass, though the center of the tumor is soft and suggests the presence of fluid. In small hematomas the swelling may disappear within three or four weeks though in larger ones from six to eight weeks or a longer time may elapse. The bony ridge that forms the periphery of the cephalematoma may at times remain permanent or the entire mass may become ossified and persist as a flat or projecting exostosis. The general health is not affected, there is no pain, and the loss of blood is as a rule not sufficient to produce constitutional effects.

In view of the fact that many of these hematomas resorb spontaneously, no special treatment is required. During the first few days, aspiration of the blood by puncture has been employed but this procedure increases the hazard of infection. If infection has occurred, incision and drainage are indicated. In the case described, manifested by the elevated area, no treatment is advised. There is still time for resorption of some of this newly formed bony tissue, and no further complications need be anticipated.

MENORRHAGIA

To the Editor—A woman aged 59 for two and one half years has periodically menstruated approximately every three months each of these periods lasting about two weeks or as on one occasion for about a month. These periods are preceded by backache. The patient otherwise feels quite well. The flow at these times is heavy and might be termed hemorrhage but is slowed by bed rest and ergot. The patient has no symptoms suggestive of the menopause. Examination reveals nothing as far as the pelvis is concerned except a slight cervical erosion which takes the stain by Schiller's test only slightly. The woman is obese and one could not be absolutely certain as to the exact size of the uterus but after repeated examinations I am reasonably certain that it is of about normal size. Leukorrhea is not complained of and appeared to only a small degree at the examinations. There is absolutely no spotting or vaginal bleeding except at the times stated. How is this case to be handled? Is a curettage indicated to rule out malignancy? Please omit name.

M D Illinois

ANSWER—Most probably the periodic bleedings in this case are physiologic and not due to a malignant growth. However, since the woman is 59 years old and the flow of blood is usually prolonged and profuse it is advisable to perform a curettement to make certain that there is nothing abnormal inside the uterine cavity. The endometrium should of course, be subjected to a careful microscopic examination to rule out carcinoma. Even if the endometrium is normal one must bear in mind the possibility of a growth in one or both ovaries. Such neoplasms may be difficult to rule out by bimanual examination in this patient because she is obese. If the patient is given a general anesthetic for the curettement an examination while she is anesthetized may reveal the exact condition of the uterus and adnexa. If the bimanual examination under anesthesia fails to reveal any abnormalities and the endometrium is normal nothing further need be done unless the bleedings

again become profuse. In this event radium should be inserted into the uterine cavity to put a stop to the menstrual function. Radium may, of course, be used at the time of the curettement. If carcinoma is found in the uterine endometrium, a panhysterectomy may be performed or radium may be employed.

LICHEN SIMPLEX CHRONICUS

To the Editor—A woman has an eruption on the inner aspect of the lower limb which has been present for thirteen years. It extends from below the knee on the inner side of the limb down to about the lower third of the limb. She states that at first it was of an oozing character but after about six months it became dry and has remained so ever since. It is covered with a thin flaky scale which is easily removed and there is no bleeding when this is done. It itches a great deal in the evening especially when the stocking is removed but not so much during the day. When the scales are removed the skin underneath has a purplish cast and throughout the lesion are lighter areas of a yellow color. She has some medium sized varicosities just above the lesion but she states that she had these injected by a physician who thought the lesion a varicose ulcer but the treatment did not alter the course of the eruption. She is now 65 years old and otherwise in good health.

H. PAUL JOHNSON, M.D. Harmony, Minn.

ANSWER—The patient apparently has a patch of lichen simplex chronicus, which is regarded by most workers as chronic papular eczema. The condition is called neurodermite by the French. It is a chronic papular dermatosis occurring in the form of patches and accompanied or preceded by severe itching. The treatment in general is that applied to circumscribed chronic eczema. X-rays and tar are particularly useful measures. X-rays should be given in small fractional doses. When using tar the aim is to produce a short, subacute inflammatory reaction which is allowed to subside of itself. Pure crude coal tar is applied to the patch and allowed to dry. On a surface which is not subject to much trauma the layer of tar will remain on the skin for several days before it flakes off, and a new layer is then applied. This treatment does not interfere with bathing and the only objection to it is its unsightly color which of course does not pertain in this instance. Another useful prescription is crude coal tar, acetone and flexible collodion in equal parts.

LEUKODERMA

To the Editor—I have a patient with leukodermic spots appearing on various areas of the extremities. He also complains of a continuous mild pain in the epigastrium. Is there any association between the gastric and skin conditions? Please suggest a method of treatment of the skin condition. Give possible causes and prognosis. Please omit name.

M D New York

ANSWER—There is probably no association between the gastric and the skin condition. The cause of the epigastric pain should be ascertained by a careful clinical and laboratory study. There is no successful method of treating leukoderma. Dilute hydrochloric acid has been suggested. Gold sodium thiosulphate intravenously has been used but is not without danger. The cause of the disorder is unknown. Occasionally a familial tendency is noted. A trophoneurosis has been suggested, in view of the association at times with alopecia areata. The prognosis is not good. The patient should keep out of the sun as this intensifies the contrast between healthy and whitened patches.

IMMUNIZATION AGAINST DIPHTHERIA

To the Editor—There has recently been put on the market a single injection alum precipitated diphtheria toxoid which is claimed to give a higher percentage of negative Schick tests with the production of immunity within two months. References are made by the manufacturers to the work of Havens, Graham and Wells in the June 1932 issue of the *Journal of the American Public Health Association* and clinical reports on their work appear in the February, 1933 issue of the *Journal of the Medical Association of Alabama*. In the April 8 issue of THE JOURNAL a report by Graham, Murphree and Gill shows that almost 95 per cent were made Schick negative by a single injection. I am writing you to inquire whether or not other authorities consider the work done to date positive enough in results to justify substitution of this single injection toxoid for the two or three injection toxoid or toxin antitoxin mixture heretofore used generally. Since the work is so recent can one be sure of permanent immunity following a single injection? Please omit name.

M D Pennsylvania

ANSWER—Until further use of the alum precipitated diphtheria toxoid has given satisfactory results in the hands of those who are in a position to test it on a large scale it would be wise not to abandon the older satisfactory methods of immunization. The permanence of immunity can be determined only by actual tests but one might expect that this would not be appreciably influenced by the method by which the immunity is produced.

SEROLOGIC TESTS FOR AMEBIC DYSENTERY

To the Editor—I am much interested in the treatment of amebic dysentery and I have heard that a blood agglutination test has been developed for the detection of the presence of *Endamoeba histolytica*. Will you favor me with full information concerning this test and where I shall be able to obtain reprints of articles on this subject?

GUY W. VAN HALTERN, M.D., Dallas, Texas

ANSWER—As far as we know there has been no blood agglutination test perfected for the detection of *Endamoeba histolytica*. Of the various serologic tests that have been tried (a review of which may be found in Tahaferro's "The Immunology of Parasitic Infections," 1929), the best seems to be complement fixation, as used by C. F. Craig (*Am J Trop Med* 9:277 [Sept.] 1929). For practical work, however, direct microscopic examination and especially cultivation of stools remain the most trustworthy methods of ascertaining the presence of *Endamoeba histolytica*.

GASTROINTESTINAL INFLUENZA

To the Editor—I should like to be enlightened as to the status of gastro-intestinal influenza. When I was in school not so long ago the professors said that there was no such thing strictly speaking, but that they were cases of food poisoning or gastritis. Private practitioners at that time called intestinal flu any case of abdominal discomfort of unknown etiology. Tidy in his fourth edition says it is rare. The enclosed bulletin of the Louisiana State Board of Health (24:2 [June] 1933) speaks of 190 cases. What is the present status of this diagnosis? Please omit name.

M.D. Louisiana

ANSWER—The term gastro-intestinal influenza is still somewhat vaguely used. There is no evidence that sporadic outbreaks of disease in which intestinal symptoms predominate are due to the infectious agent that causes true pandemic influenza. Many of the occasional outbreaks called "intestinal flu" and similar names have been shown to be various types of gastro-enteritis caused by paratyphoid bacilli and similar organisms. In such an instance as the outbreak of gastric and respiratory influenza reported by Thomas McGowan in Glasgow (*M. Officer* 46:115 [Sept. 12] 1931), no convincing evidence is presented that the outbreak was really influenzal in nature. An interesting possibility is suggested by C. C. McLean (*South M J* 24:624 [July] 1931), who believes that the disease known as intestinal influenza in certain localities is a definite entity of unknown etiology. Perhaps the outbreak described in the bulletin sent by our correspondent belongs in this category. It is certainly true that up to the present no definite relation between such outbreaks of gastro-enteritis and influenza has been established.

TINNITUS AFTER OTITIS MEDIA

To the Editor—A patient several months ago had bronchopneumonia followed by a left sided suppurative otitis media for which a myringotomy was done. A seropurulent exudate was drained. Since that time the patient has been complaining of an intermittent ringing and buzzing of the left ear. The examination of the nose, throat and ears at this time is essentially negative. The patient is under continuous treatment but does not seem to get any relief. Do you think that these ear noises are functional or organic in nature? What is the prognosis? What in your opinion is the best treatment? Is psychotherapy indicated? Please omit name and address.

M.D. New York

ANSWER—With tinnitus due to an acute or a subacute otitis media the prognosis is a rule is quite good. It is possible that there is still a small amount of serous exudate in the middle ear, and if so myringotomy followed by a careful inflation of the ear will serve a good purpose. The condition is certainly an organic one and not a functional one. If there is no fluid in the middle ear, careful catheterization followed by the use of a mild sedative such as bromides, will often aid in recovery. In some instances small doses of belladonna are efficacious. The nasopharynx should be carefully examined and if any abnormalities are found which influence the patency and proper aeration of the eustachian tube they should be corrected.

LATENCY OF MALARIA

To the Editor—I have not been able to find an answer in textbooks to the question: Can one who has had malaria, not the tropical type, still have recurrent chills fifteen years later after supposed cure? I have been asked to examine blood smears of patient of this type with no demonstrable signs of malarial parasites. If there is a possibility of the condition to be true, can you suggest a method when the parasite is likely to be in the blood?

A.M.D. (1014) San Francisco

ANSWER—The question of how long a malaria infection can remain latent and later relapse is one on which there are comparatively little controlled data and consequently many diverse opinions. In general relapses after seeming cure are least frequent in *Plasmodium falciparum*, more frequent in *P. vivax*

and most frequent in *P. malariae*. The question applies chiefly to *P. vivax*. Although some investigators believe there are authentic cases of this infection remaining latent seven or even fifteen years and then relapsing, such occurrences must be rare and most investigators view with suspicion so-called relapses occurring more than three years following cure. If these cases are true relapses it should always be possible to demonstrate the parasites in thick blood films.

ANTUITRIN S—PARKE DAVIS & CO

To the Editor—Parke Davis & Co. of Detroit is putting out a substance named Antuitrin S and the representative in this district has advertised this as containing the ability to check the flow of uterine hemorrhage caused from submucous fibroids of the uterus and any other uterine tumors not malignant. Does the American Medical Association think that this Antuitrin S will relieve the excessive menstrual flow in benign tumors of the uterus that have successive hemorrhages?

S. R. BOKRY, M.D., Topeka, Kan.

ANSWER—"Antuitrin S"—Parke, Davis & Co. is said to contain the prolactin principle of Aschheim and Zondek, obtained from the urine of pregnant women. The published evidence indicates that prolactin is of value only in certain cases of functional uterine hemorrhage. The *JOURNAL* does not know of any evidence that it may relieve hemorrhage due to uterine tumors of any sort, whether benign or malignant. The report of the Council on Pharmacy and Chemistry on "Estrogenic Substances Theelin" (*THE JOURNAL*, April 29, p. 1331) covers this phase of the problem at some length. Antuitrin does not stand accepted by the Council on Pharmacy and Chemistry.

EFFECTS OF EPHEDRINE IN NOSE

To the Editor—Can you advise me as to what possible bad effects might be expected following the frequent possibly daily use of a dilute solution of ephedrine not over 0.5 per cent in liquid petrolatum over a long period of time not only as regards the effect on the membranes of the nose but particularly with regard to any systemic effect? This inquiry is prompted by the question of a patient using such a preparation who had gotten information through lay sources to the effect that ephedrine has effects somewhat similar to cocaine. Please omit name.

M.D. North Carolina

ANSWER—Cocaine is usually classed as a narcotic and has a local anesthetic effect when applied to the mucous membrane of the nose. In some instances in which ephedrine has been used for long periods, individuals have developed a rapid pulse and sometimes a tremor. On the other hand, some persons may use it for a long time without any untoward symptoms. So far as the use of ephedrine in oil on the mucous membrane is concerned it has been stated by some research workers that the oil has a deleterious effect on the cilia, but bad results have not been observed from the use of liquid petrolatum to which a small amount of ephedrine has been added.

RELATION OF MYOCARDITIS AND CORONARY THROMBOSIS TO TRAUMA

To the Editor—A man aged 57 was accidentally struck over the pericardium by a golf ball. He was in a state of shock for fifteen minutes and gradually recovered so that he was able to attend to his business the following two days. On the night of the third day there was an attack of angina pectoris with electrocardiographic evidence of cardiac infarctions. Prior to the chest injury there had been no symptoms of coronary disease. Is it likely that there was a traumatic myocarditis? Can you refer me to some literature bearing on this subject? Please omit name.

M.D. Lincoln, Neb.

ANSWER—Mild infections may predispose to a coronary thrombosis as mild infection of the upper respiratory tract, mild cystitis or some minor ailment, and it is conceivable that the slight accident might have had some bearing on the coronary thrombosis. It is much more likely, however, that it was simply a coincidence.

Traumatic myocarditis is one of those indefinite terms that is best not used at all, and there is no literature of scientific value on the subject.

USE OF VIOSTEROL IN RICKETS

To the Editor—A representative of the Upjohn Pharmaceutical Company made the statement that there had not been a single case of practical clinical recovery from rickets by the use of viosterol. Is this true or is it just propaganda? Please omit name.

M.D. S. N. Y.

ANSWER—This statement is absolutely without fact. Numerous chemical investigations were undertaken to determine the prophylactic and therapeutic value of viosterol before it appeared on the market. It was found that when this substance was given in adequate amounts it would prevent and cure rickets.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILIGOLOGY Oral New York Dec 15 16 Sec Dr C Guy Lane, 416 Marlboro St Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Written (Group B Candidates) The examinations will be held in various cities of the United States and Canada Dec 9 Sec, Dr Paul Titus 1015 Highland Bldg, Pittsburgh

AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 Sec Dr William H Wilder 122 S Michigan Blvd Chicago

AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec, Dr W P Wherry 1500 Medical Arts Bldg, Omaha

ARKANSAS Regular Little Rock Nov 14 Sec Dr A S Buchanan Prescott *Homeopathic* Little Rock Nov 14 Sec Dr Allison A Pringle Lurela Springs *Eclectic* Little Rock Nov 14 Sec Dr L L Marshall 401 W 3d St Little Rock

CALIFORNIA Reciprocity Los Angeles Dec 6 Sec, Dr Charles B Pinkham 420 State Office Bldg Sacramento

CONNECTICUT Regular Hartford Nov 14 15 Endorsement Hartford Nov 28 Sec Dr Thomas P Murdock, 147 W Main St Meriden *Homeopathic* New Haven, Nov 14 Sec Dr Edwin C M Hall 82 Grand Ave New Haven

DELAWARE Wilmington Dec 12 14 Sec, Dr Harold I Springe 1013 Washington St, Wilmington

FLORIDA Jacksonville Nov 13 14 Sec Dr William M Rowlett Box 786 Tampa

KANSAS Topeka Dec 12 13 Sec Dr C H Ewing Larned

KENTUCKY Louisville Dec 5 7 Sec Dr A T McCormack 532 W Main St Louisville

MAINE Portland Nov 14 15 Sec Dr Adam P Leighton, Jr, 192 State St Portland

MARYLAND Regular Baltimore Dec 12 15 Sec Dr Henry M Fitzhugh 1211 Cathedral St Baltimore *Homeopathic* Baltimore Dec 13 14 Sec Dr John A Evans 612 W 40th St Baltimore

MASSACHUSETTS Boston Nov 14 16 Sec Dr Stephen Rushmore 144 State House Boston

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations will be held at centers in the United States where there are five or more candidates Feb 14 16 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia

NEBRASKA Lincoln Nov 22 24 Director Bureau of Examining Boards Mrs Clark Perkins State House Lincoln

NORTH CAROLINA Raleigh Dec 4 Sec Dr B J Lawrence 503 Professional Bldg Raleigh

OHIO Columbus Dec 6 8 Sec Dr H M Platter 21 W Broad St Columbus

PENNSYLVANIA Philadelphia Jan 2 6 Sec Mr W M Demison 400 Education Bldg, Harrisburg

SOUTH CAROLINA Nov 14 Sec Dr A Earle Boozer 505 Saluda Ave Columbia

TEXAS San Antonio Nov 21 23 Sec Dr T J Crowe 918 19 20 Mercantile Bank Bldg Dallas

WEST VIRGINIA Morgantown Nov 16 18 State Health Commissioner Dr Arthur E McClure Charleston

Illinois June-July Examination

Mr Eugene R Schwartz, superintendent of registration Illinois Department of Registration and Education, reports the written and practical examination held in Chicago, June 27-July 1, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Two hundred and twenty-three candidates were examined, 220 of whom passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Chicago Medical School	75 75 76,* 76 77* 77 78*	(1929)	75*
(1931) 77 (1933) 75	78 78 78 78 79 79 80 81 81 82 83 83 83		
Coll of Med and Surgery (Physio Medical), Chicago	83 83 83 85	(1911)	75
Loyola University School of Medicine	87 (1933) 76 76 76, 77* 77 78* 78 78 78 78	(1932)	84*
79 79 79 79 79 79 80* 80* 80* 80 80 80	80 80 80 81* 81, 81 81 81 81 81 82 82 82 83		
83 83 83 83 83 83 83 83 84* 84 84 85,*	85 85 85 85 85 85 86 86 88 †		
Northwestern University School	86 (1933) 76* 80* 80 81* 81 83* 83 84 84, 85*	(1932)	81
85 85 85 85 86 86 86 87 88			
Rush Medical College	82 86 (1933) 80* 80* 80 81* 81 81 82* 82 82	(1932)	78
82 83 83 84 85 87 87 88 88 88			
School of Medicine of the Division of the Biological Sciences University of Chicago	-	(1932)	88
University of Illinois College of Medicine	-	(1932)	81
85* (1933) 77 77 79 79 79 79 80 80 80 80			
81* 81 81 81 81 81 82* 82 82 82 82 82			
82 82 82 82 83 83 83 83 83 84 84 84 84			
84 84 85 85 85 85 85 85 86* 86* 86 86			
86 86 86 86 86 86 86 86 87, 87 87, 87 87, 87			
88 89 89			
State University of Iowa College of Medicine	(1932)	83	
Boston University School of Medicine	(1932)	79	
University of Minnesota Medical School	(1932) 88	(1933)	83
University of Missouri School of Medicine	(1932)	83	
St Louis University School of Medicine	(1932)	78	
Washington University School of Medicine	(1931)	77	
Creghton University School of Medicine	(1931)	77	

Syracuse University College of Medicine	(1930)	85*
Pempe University School of Medicine	(1932)	79
Marquette University School of Medicine	(1933) 82*	87*
University of Wisconsin Medical School	(1932)	87*
Medizinische Fakultät der Universität Wien	(1925)	79
I (karske) Fakultät Karlovy University Czechoslovakia	(1919)†	76
Regia Universita di Napoli Facoltà di Medicina e Chirurgia	(1930)	78

College	FAILED	Year Grad	Per Cent
Chicago Medical School	(1932) 71	(1933)	64
Universitatea Regele Ferdinand I din Cluj Facultatea de Medicina si Farmacie Rumania	(1927)†		51

* License withheld for fee

† Average grade not reported License withheld for fee

‡ Verification of graduation in process

Connecticut July Examination

Dr Thomas P Murdock, secretary, Connecticut Medical Examining Board reports the written examination held in Hartford July 11-12, 1933. The examination covered 6 subjects and included 60 questions. An average of 75 per cent was required to pass. Nineteen candidates were examined, 16 of whom passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1931) 81.4 (1932) 77.5 79.2 86	(1930)	80.3
Georgetown University School of Medicine	(1931) 76.5 (1932)		75
University of Maryland School of Medicine and College of Physicians and Surgeons	(1933)		78.7
Tufts College Medical School	(1932) 75 (1933)		78.4*
New York University University and Bellevue Hospital Medical College	(1933)		79.5
Jefferson Medical College of Philadelphia	(1932) 78.4		87.7
University of Pennsylvania School of Medicine	(1933)		84.1
McAll University Faculty of Medicine	(1931)		83.2*
Osteopathy †			83.2

College	FAILED	Year Grad	Per Cent
Georgetown University School of Medicine	(1932)		72.7
Queen's University Faculty of Medicine	(1924)		73.3
University of Montreal Faculty of Medicine	(1933)		67.2

Twenty-one physicians were licensed by endorsement from July 25 to September 11. The following colleges were represented:

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement
Yale University School of Medicine	(1926) (1930) (1931) 3 (1932) N B M	(1926)	New York
Georgetown University School of Medicine	(1933) N B M	(1930)	New York
Johns Hopkins University School of Medicine	(1931) N B M Ex	(1911)	Maryland
Harvard University Medical School	(1914) Massachusetts (1930) N B M Ex	(1929)	N B M Ex
University of Michigan Medical School	(1933) N B M Ex	(1929)	N B M Ex
Columbia University College of Physicians and Surgeons	(1931) N B M Ex	(1930)	Ohio
University of Rochester School of Medicine	(1904) Vermont	(1931)	N B M Ex
Queen's University Faculty of Medicine	(1927) Michigan		

* License has not been issued

† Licensed to practice medicine and surgery

Colorado July Report

Dr William Whitridge Williams, secretary, Colorado State Board of Medical Examiners reports the written and oral examination held at Denver July 11, 1933. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Fifty-five candidates were examined, all of whom passed. Thirteen physicians were licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
College of Medical Evangelists	(1933)		83.2
University of Colorado School of Medicine	(1933) 81.4 82 83 85 85.1 85.2 85.3 86 86 86	(1932)	86.3
86.5 87 87.1 87.1 87.1 87.2 87.2 87.3 87.4 87.5			
88 88 88 88 88 88.2 88.2 88.2 88.3 88.5			
89 89 89 89 89 89.3 91			
Northwestern University Medical School	(1932)		90
(1933) 85.1 86			
Indiana University School of Medicine	(1933)		90
State University of Iowa College of Medicine	(1932)		83
University of Louisville School of Medicine	(1932)		88.5
St Louis University School of Medicine	(1926) 87 (1933)		84.2
McGill University Faculty of Medicine	(1932) 85 86.5		
Osteopathy*	79, 79.4 80 81 84.1 87.5		

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement
Loyola University School of Medicine	(1929)		Michigan
Tulane University of Louisiana School of Medicine	(1932)		Louisiana
University of Michigan Medical School	(1929)		Minnesota
(1931) Michigan			
St Louis University School of Medicine	(1931)		Missouri

John A Creighton Medical College
Creighton University School of Medicine
University of Oklahoma School of Medicine
University of Oregon Medical School
University of Pennsylvania School of Medicine
Baylor University College of Medicine
University of Texas School of Medicine
University of Edinburgh Faculty of Medicine

(1910) Nebraska
(1932) Nebraska
(1932) Oklahoma
(1930) California
(1910) Mass
(1930) Tennessee
(1932) Texas
(1930) Great Britain

One physician was licensed by endorsement, May 6 The following college was represented

College	LICENSED BY ENDORSEMENT	Year	Endorsement
Milwaukee Medical College		Grad of	
		(1900)	Wisconsin

* Licensed to practice medicine and surgery

Iowa Reciprocity Report

Mr H W Grefe, director Division of Examinations and Licenses, reports twenty-five physicians licensed by reciprocity from April 8 to Aug 22, 1933 The following colleges were represented

College	LICENSED BY RECIPROCITY	Year	Reciprocity
University of Arkansas School of Medicine		(1932)	Arkansas
Atlanta School of Medicine Georgia		(1908)	Georgia
Northwestern Univ Medical School (1927)	(1930)	(1931)	Illinois
Rush Medical College	(1929)	(1932 2)	Illinois
Indiana University School of Medicine		(1932)	Indiana
Washington University School of Medicine		(1932)	Missouri
Creighton University School of Medicine	(1927),	(1932)	Nebraska
University of Nebraska College of Medicine		(1909)	
(1931) (1932 4) Nebraska (1932) Maryland			
University of Cincinnati College of Medicine		(1932)	Ohio
Baylor University College of Medicine		(1930)	Texas
University of Texas School of Medicine		(1932)	Texas
Medical College of Virginia		(1928)	Virginia
Marquette University School of Medicine		(1932)	Wisconsin
University of Wisconsin Medical School		(1931)	Missouri

Book Notices

Surgery of the Stomach and Duodenum By J Shelton Horsley M.D. F.A.C.S. L.L.D. Attending Surgeon St Elizabeth's Hospital Richmond Va Cloth Price \$7 50 Pp 260 with 136 illustrations St Louis C V Mosby Company 1933

This monograph presents primarily the knowledge, clinical experiences and opinions of a well known competent gastric surgeon It reflects the problems that confronted him and provides the ways and means that proved successful in his hands The work is divided into fourteen chapters The preliminary four chapters consider the embryology, anatomy and physiology of the stomach and duodenum the diagnosis of lesions of these structures and a practical discussion of their two chief lesions, namely, peptic ulcer and cancer Concerning the etiology of ulcer the author shows an increased interest in the neurogenic theory, while of cancer of the stomach he says "One of the ways we can account for the majority of the cases of cancer of the stomach is that they originate from benign lesions or tumors that have given no symptoms until malignancy occurs and is well advanced By far the greater part of the text is devoted to a rather detailed description of the various surgical procedures on the stomach and duodenum, their indications technic and complications The book is beautifully and amply illustrated concise to a fault at times and is practical It is recommended to all interested in the subject.

Rheumatismus und Grenzgebiete Von Dr Anton Fischer Oberarzt am Rheumaforschungsinstitut am Landesbad der Rheinprovinz Aachen Fachbücher für Ärzte Band 11 Herausgegeben von der Schriftleitung der Klinischen Wochenschrift Cloth Price 18 marks Pp 223 with 43 illustrations Berlin Julius Springer 1933

This is one of a series of small books published apparently especially for general practitioners The author covers not only diseases of the joints but also diseases of the epiphyses as Perthes, Kohler's and Kienbock's diseases Included in the joint diseases in addition to rheumatism are discussions of tuberculous and syphilitic lesions involving the articulations Ten pages is devoted to a discussion of gout In the first thirty six pages the author discusses the means employed in diagnosing joint diseases He emphasizes the importance of the history and describes the method of conducting the physical examination and the value of various serologic and immunologic tests and the interpretation of roentgenograms His classification of rheumatism is rather confusing owing largely

to the nomenclature Unfortunately, in the nomenclature recommended by the International League for the Study of Rheumatism the term "arthritis deformans" in the German classification is synonymous with "osteo-arthritis," while in the English nomenclature this term is synonymous with "rheumatoid arthritis" The author is a physician with a wide clinical experience in this group of diseases and evidently has a good knowledge of pathology He has compressed a large amount of information in a relatively small volume The book should be of great value to the practitioner and also to the specialist who desires to have at hand a concise reference book

Clinical Aspects of the Electrocardiogram Including the Cardiac Arrhythmias By Harold E B Pardee M.D. Assistant Professor of Clinical Medicine Cornell University Medical College Third edition Cloth Price \$5 50 Pp 295 with 74 illustrations New York Paul B Hoeber Inc 1933

The practical aspects of electrocardiography have been treated admirably, with a minimal amount of overlapping of material From this standpoint the third edition, although making no noteworthy additions over its predecessor published five years ago is one of the best books written so far for the clinician Perhaps the best chapter is the fourth, dealing with the electrocardiographic changes in myocardial disease With the evidence adduced that the leuogram and dextrogram of Lewis cannot be strictly applied to the human electrocardiogram, one finds identical curves in the two editions (fig 15 in the second and fig 18 in the third edition) now with the more modern labeling The significance of a deep Q wave is also discussed Excellent as the practical substance of this book is, one may also seriously question whether the additions and changes in the theoretical aspects of electrocardiography found in this edition sufficiently warrant a new printing From the standpoint of theory, notwithstanding the contributions of Craib and Wilson during the last few years and of which mention is made by the author, perhaps little has been added during the past five years that is significant The meaning of electrocardiographic deflections is imperfectly understood Physicians not in possession of the second edition of Pardee's book can hardly afford to be without his latest contribution It is highly recommended

Human Mentality in the Light of Psychiatric Experience An Outline of General Psychiatry By Bror Gadellus Cloth Price 33 Danish crowns 33 shillings Pp 620 with 49 illustrations Copenhagen Levin & Munksgaard 1933

This textbook of psychiatry, originally published in two volumes under the Swedish title *Det mänskliga själslivet*, is intended as a general guide to normal psychology and psychopathology The author has especially attempted to point out the manner in which normal psychology has been benefited and clarified by psychiatric experience The book is extremely detailed and copiously annotated Its scope is large the subject matter is well chosen and the style is scholarly There are eighteen chapters grouped into three main sections on (1) the functional structure of mental life and its morbid changes (2) causes and (3) treatment of mental diseases The two introductory chapters give a brief survey of the history of psychiatry and a discussion of epistemological points of view or working methods of psychiatry The eleven chapters in the first section deal with psychologic principles the morbid changes in the emotional life, philosophical discussion of the ego and its disorders the abnormalities of memory thinking and volition and discussions of regression and psychotic symptomatology The author's approach to these subjects is primarily psychobiologic though recognition and adequate discussion are given to other schools of psychopathologic thought The second section discusses causative factors in mental illness under two chapter headings endogenous versus exogenous causes and influences of heredity Consideration is given to the psychoanalytic approach, but this is discussed at greater length under a separate heading The third section composed of three chapters is devoted to the principle of modern treatment an examination of psychoanalysis and a discussion of forensic psychiatry illustrated by numerous citations from Swedish civil and criminal experience

Students of psychiatry will find the organization of the book somewhat different from the case analysis method commonly used in American textbooks There is enormously detailed

philosophical discussion, especially with regard to fundamental psychologic principles. The author's dynamic approach is illustrated in the following: "The normal mental structure has its susceptible points, its pre-formed lines of breaking, hence the morbid changes of personality do not set in anyhow and quite capriciously but in a manner determined by the nature of the mental functions." In spite of the abundance of reference and illustrative material, the clinical approach seems unsatisfactory. Noticeably lacking is any thorough discussion of the neuroses, a symptom complex receiving more and more attention in medical education. The section on treatment does not seem adequate for clinical usage and consistently emphasizes the institutional therapeutic method and program. Freudian psychoanalysis is attacked as unstable, inadequate and highly fantastic, and Freud is personally discredited. The book is of definite value to the psychiatrist and stands as a monumental compilation of data and references to continental literature. For those who are in search of a complete usable textbook for psychiatric teaching the book would seem too involved. The illustrations are well chosen.

The Story of Childbirth. By Dr Palmer Findley. Cloth. Price \$3. Pp 376 with 124 illustrations. Garden City: Doubleday, Doran & Company, Inc. 1933.

This book has an attractive appearance and a good name as author. Apparently it is intended for laymen. It is a collection of pictures, anecdotes and historical references to customs and tabus of childbirth, there are discussions on the maternal impression theory, on sterility and fertility on abortion, a chapter on dystocia among the savage tribes thoroughly, if not politely illustrated, the history of the midwife and trained nurse and a well deserved appreciation of Mary Breckinridge's "Frontier Nurses", a history of gonorrhea and syphilis and their effects on the human race, with much moralizing, a history of anesthetics, and a history of puerperal infection. Poor Ignaz Philip Semmelweis—he is here rechristened Emil! The usual indefensible statement is made that the United States is the worst place in the civilized world for a woman to have a baby, and—unfairly—the statistics of the various countries, which, all serious students of the situation decide are not comparable, are repeated again in an attempt to prove it. The chapter on prenatal and postnatal care is good, but does it belong? Does the "monkey trot" really prevent displacements? There is a good chapter on birth control and abortion, a chapter on dress and maternity, interesting if not instructive, a chapter on embryology and the anatomy and physiology of pregnancy and labor, a chapter on the 'Lost Art of Obstetrics' which is a tirade against forceps and cesarean section in which good and bad and irrelevant are mixed with numerous malappropriate pictures. Such a chapter (like several of the others) is more likely to destroy confidence in the profession than to restore the Lost Art. What is the "art of obstetrics"? Finally there is a chapter on the modern maternity hospital.

Recherches personnelles pour servir à l'étude de la gonococcie. Par A. Guepin. Paper. Price 30 francs. Pp 218. Paris: Les Presses Universitaires de France. 1933.

Guepin presents an interpretation and clarification of the problem of gonococcal infection based on extensive experience and investigation. He deplores the confused state of knowledge and lack of interest in this infection, the consequences and disastrous end-results of which are frequently minimized. He conceives gonorrhea to be a deep seated infection of the genital tract with a tendency for the gonococcus to persist and multiply in the tissues. There is no definite termination to the infection which progresses until it exhausts itself. Too much emphasis is placed on the urethral discharge. The abundance or scarcity of urethral secretions is no indication as to the severity or mildness of the infection, in the author's experience. The gonococcus may gradually be altered by the reaction of the tissues. In 1907 Guepin first emphasized the necessity for cultural studies of gonococci in the secretions and since then he has been an ardent advocate of spermoculture in diagnosis and treatment, especially in patients contemplating marriage. The cytology of the prostatic secretions is discussed and the importance of this method of studying the deeper gonococcal infections is emphasized. There are many gonococcus carriers whom Guepin classifies as convalescents, chronic carriers and

healthy carriers. He was able to demonstrate virulent gonococci in 70 per cent of men and 80 per cent of women supposedly cured clinically. The history and technic of spermoculture are discussed in detail. The author is pessimistic about abortive treatment. The cessation of discharge under chemical applications is no indication of cure. The use of irrigation with dilute solutions of antiseptics is recommended. The author has obtained the same results with 8 per cent solution of sodium chloride as with strong silver protein, mild silver protein or potassium permanganate. The technic and indications for prostatic massage are described. This monograph is a stimulating discussion of the entire question of gonococcal infection. It is replete with original concepts based on extensive work in this field.

Nervous and Mental Diseases for Nurses. By Irving J. Sands, M.D., Associate in Neurology, Columbia University. Second edition. Cloth. Price \$1.75. Pp 281 with 19 illustrations. Philadelphia & London: W. B. Saunders Company. 1933.

This work has already proved its worth as a textbook. The greater part is occupied by succinct descriptions of the various neurologic and psychiatric disease entities, described in such a way that they can be recognized but not in greater detail than would be needed in the instruction of nurses in either a general or a psychopathic hospital. These descriptions are introduced by elementary chapters on neuro anatomy, endocrinology and psychology. One question whether these are complete enough to make the later clinical material any clearer. The chapter on the development of modern psychiatry might better be placed before the section of the book that describes psychiatric disorders. The chapter on mental hygiene is sufficient to give nurses a smattering of a subject concerning which they are likely to hear much, and those parts of the book dealing with nursing procedures, although much abbreviated and omitting discussion of note making, would seem to present a good deal of accurate information. The advisability of including such a brief chapter on psychoanalysis (new in this edition) must remain in doubt. It is too terse to give a real understanding of the subject and cannot in such a brief space, adequately prepare the nurse to continue studying the subject. The book should be helpful to those who must assign a simple book on nervous and mental diseases to their student nurses, but for those who are teaching advanced psychiatric nursing it leaves much to be desired.

Die Histopathologie der Uterusmucosa. Ein Leitfaden für Gynäkologen und Pathologen bei der histologischen Diagnostik. Von Dr. H. T. Deelmann, ord. Prof. der allgemeinen Pathologie und pathologischen Anatomie der Reichsuniversität Groningen. Paper. Price 22 marks. Pp 247 with 248 illustrations. Leipzig: Georg Thieme. 1933.

This book is dedicated to the needs of the laboratory examiner who is confronted with the often difficult task of making a reliable diagnosis from scanty scrapings. It is a serious attempt to be a guide in difficult diseases. Particular emphasis is laid on changes in the uterine mucosa occurring during normal and complicated pregnancy. Probably the characteristic feature of this book is the approach to the subject. After a few theoretical and practical considerations at the beginning of each paper the author gives a series of concise case reports, including only the relevant histories, a short follow-up study, and a microscopic description of the scrapings with photomicrographs. A whole section is devoted to atypical changes in the uterine mucosa which may be confused with early carcinoma. The term "malignant adenoma" is not approved because it merely indicates that there are instances of carcinomas of the uterus showing little atypical cellular change. The point is stressed that difficulties may arise from the fact that the structure in a given uterine carcinoma may vary in various sections. Such structural differences are much greater in uterine carcinomas than in most other carcinomas. A series of cases is included with the relevant histories and microscopic pictures of the curettings which are not definitely diagnosed as carcinoma and from which the conclusions must be drawn that the question "malignant tumor or benign hyperplasia" or "benign tumor" cannot always be answered. The illustrations with the exception of two are photomicrographs and most of them are excellent. Both the pathologist and the gynecologist will find this book useful, the pathologist because of the micro-

scopic features and the differential diagnostic points, and the gynecologist because of the case histories and the correlation between clinical and histologic observations. The book also will make the clinician realize the difficulties the pathologist is often confronted with in diagnosing scrapings and will teach him not to expect miracles from the morphologist.

Sindromi oculo simpatiche Da Enrico Morelli Paper Price 40 lire
Pp 461 with illustrations Pisa Casa editrice Giardini 1933

The title is misleading, since one would expect to find the book limited to ocular disturbances of neurogenic origin, whereas it is a mine of concise and authentic information on the anatomy, physiology and clinical pathology of the vegetative nervous system. In the first part the author has written interestingly on the history, embryology and anatomy of the vegetative nervous system describing the interrelationship to the chromaffin system. Several fine illustrations help to make the text interesting. In the second part there are thirteen chapters dealing with the physiology of the vegetative nervous system. The functional relationship between the parasympathetic and the sympathetic division is well discussed. Then a general review is made of the sympathetic syndromes and of the humoral influences, also the relationship to endocrine disturbances and vitamin deficiencies affecting the vegetative nervous system. The third part deals again, from a general standpoint, with the symptomatology of disturbances of the parasympathetic and sympathetic system, and reviews existing pharmacologic knowledge of the various drugs affecting the function of the system. It is only in the fourth part of the book that the author takes up the various ocular syndromes connected with the vegetative nervous system. He discusses the various angiospasm of the eye, glaucoma and the pharmacology of drugs influencing the course of the disease. The sympathetic in relation to glaucoma is fully discussed in connection with theory of the neurogenic origin of this disturbance. The last chapter deals with the interrelationship of vegetative disturbances due to infection of the sinuses, ear and nose.

Frontiers of Medicine By Morris Fishbein M.D. Editor Journal American Medical Association and Hygeia the Health Magazine A Century of Progress Series Cloth Price \$1 Pp 207 Baltimore Williams & Wilkins Company in Cooperation with the Century of Progress Exposition 1933

A Century of Progress series consists of small books by well known writers on the fundamental sciences on which is based the development that has led to modern industry. In this series the progress of medicine is represented by the present volume. The narrative follows in the main the chief epochs in medical history before Hippocrates from Hippocrates to Galen the middle ages, the revolt against dogmatism, the foundation of anatomy by Vesalius and of physiology by William Harvey, the development of clinical medicine begun by Sydenham, Pasteur and the microbic era, and the modern period. "An attempt has been made, by occasional use of narrative forms to add interest to what would otherwise be merely a list of names and dates." In this attempt the author has succeeded well. The tale is told in readable and interesting fashion. The book deserves to be read widely, and physicians would do well in recommending it to all persons who may be interested in a brief but graphic account of the development of medicine.

Vitamin A Content of Foods and Feeds By G. S. Fraps and Ray Trechler Division of Chemistry Texas Agricultural Experiment Station Bulletin No 477 Agricultural and Mechanical College of Texas Paper 1p 34 College Station Brazos County Texas 1933

The bulletin briefly summarizes the significance of vitamins A, B, C, D, E and G and gives in detail the method of estimating vitamin A activity. Tables give the vitamin A content expressed in units of foods and feeds investigated by the Texas Agricultural Experiment Station and as reported in the literature. Sections of the report are devoted to factors that affect the vitamin A activity of foods such as drying or curing, canning, heredity and the stage of growth and the effect of vitamin A in food on the vitamin A content of milk, butter and eggs. The cost of vitamin A activity in human food and the quantities of vitamin A required by animals and man are touched on. The bulletin is of exceptional value to all concerned with the vitamin A content of foods in the dietary.

Gynécologie opératoire Par Henri Hartmann professeur honoraire de clinique chirurgicale à la Faculté de médecine de Paris Second édition Paper Price 110 francs Pp 585 with 478 illustrations Paris Masson & Cie 1913

Professor Hartmann has produced an operative gynecology that should be of real value to American gynecologists and general surgeons who perform gynecologic operations. The text is clear and concise. The illustrations, a considerable number of which are of instruments, are well reproduced and may be easily understood by the trained surgeon. Among the procedures not commonly shown in American works are operations on the pelvic sympathetics for dysmenorrhea and other types of severe pelvic pain. The work contains a fairly complete discussion of diagnostic methods and minor therapeutic measures in the first part. This is of interest in that it illustrates certain variations of methods one finds when visiting clinics in various parts of the world. While French gynecology may differ from American practice, readers in this country may find many useful suggestions from a close study of principles employed in Professor Hartmann's clinic. The publishers apparently have considered the reduced finances of the average physician, since the work has been bound with an attractive paper cover and is printed on good but inexpensive paper. This has made it possible to offer an unusually worth while work at a low cost.

Medicolegal

Silicosis Compensability under Workmen's Compensation Act (California), When Right to Compensation Begins—The Spicky Polish Corporation, in the manufacture of silica powder for commercial purposes, ground silica rock into a very fine powder. Marsh, Lange and Woods, while employees of the corporation, were engaged in the process and took part in sacking the product. Marsh's last day of service was Feb 13, 1928. He died, Feb 14, 1930. His widow filed her claim for death benefits, under the workmen's compensation act, Oct 20, 1930, alleging that his death was due to silicosis contracted in the course of his employment. Woods last worked on Aug 3, 1929. He died, Aug 10, 1929. His widow filed her claim for death benefits, Oct 20, 1930, attributing death to silicosis. Lange last worked on June 8, 1928, and filed his application for disability payments, Oct 20, 1930, naming silicosis as the cause of his disablement. The industrial accident commission held that no occupational injury could have occurred after the last day of the employee's service and that for the purpose of the act the date of injury was the day on which that service terminated. The commission rejected all three claims on the ground that each was barred by the lapse of time under the provisions of the act. The claimants contended however, that the date of injury was the date when a medical practitioner could determine the nature of the disease from which the employee was suffering, and appealed to the court of appeal. At the request of the justices of the court of appeal the causes were transferred to the Supreme Court of California for determination. That court adopted practically in its entirety an opinion prepared by an acting justice of the court of appeal, Johnson.

An occupational disease, said the Supreme Court, is not classed as an accident but as an injury. Under the workmen's compensation act, proceedings for the collection of disability payments must be begun within six months from the date of the injury and proceedings for the collection of death benefits must be begun within one year from the date of death. In such an occupational disease as silicosis the exact date of origin cannot be determined. It is the cumulative effect of exposure day after day that produces the injury. Because injury in the statutory sense is referable to a period of time rather than to a point in time some rational norm must be adopted for determining the date of the injury as a basis for the determination of the statutory period of limitation for the filing of claims. For purposes of compensation an injury dates from the time when the disease condition causes an incapacity for work. It is then that the employer's liability becomes fixed,

for until then the workman had received no injury in the legal sense, even though the seeds of the injury lodged in his body long before. A latent and progressive disease may not culminate in disability until a considerable period after employment has terminated. If the disabling result is delayed, the injury is correspondingly delayed, and the right to compensation does not accrue until disability occurs.

In the case of a latent and progressive disease, such as pneumoconiosis it cannot reasonably be said that the injury dates necessarily from the last day of exposure to a dust-laden atmosphere. The date of the injury should be deemed the time when the accumulated effects culminate in a disability traceable to the latent disease as the primary cause, and when, by the exercise of reasonable care and diligence, it is discoverable and apparent that a compensable injury was sustained in performance of the duties of employment. To justify an award for disability or death on account of an occupational disease, there must be established an unbroken causal connection between the injury and the employment, or the condition under which the employee is required to carry on his work. When such an unbroken chain of causation is found to exist, all physical consequences flowing from the disease or injury are proper elements for consideration in determining the merits of a claim for compensation or death benefits.

In the case of Woods, application for death benefits was not made until after more than a year after his death and the industrial accident commission properly denied relief. In the case of Marsh, while the application for death benefits was filed within the prescribed time after death the industrial accident commission held that death did not occur within one year after the date of the injury, as was necessary under the workmen's compensation act to entitle the widow to death benefits. The Supreme Court pointed out, however, that in reaching its conclusion in this case the industrial accident commission fixed as the beginning of the prescribed one year period the date when the deceased was first disabled and not the date when silicosis was or should have been diagnosed as the primary and efficient cause of the disability. The order of the industrial accident commission in this case was therefore annulled and the case remanded with instructions to ascertain when the prescribed period of limitations began to run in accordance with the rule laid down by the court. In the Lange case, the industrial accident commission made no finding as to the date when silicosis should or could have been discovered as the efficient and primary cause of his disability, and the evidence failed to disclose sufficient data to justify a conclusion as to when a causal connection between the occupation and the disability of Lange was or should have been discovered. This case also was remanded for further consideration.—*Marsh et al v Industrial Accident Commission of California (Calif)*, 18 P (2d) 933

Silicosis Duty of Employer at Common Law—In selecting instrumentalities for the protection of his employee, such as the instrumentalities necessary for the adequate ventilation of his plant, an employer is required to use only "reasonable care." At common law, says the U S circuit court of appeals, third circuit, citing *Haines v Spencer* 167 F 266, "The employer is not an insurer, and the duty imposed upon him is not to furnish the safest or newest and best machines and appliances, but only to exercise due care to provide those which are reasonably free from danger." Negligence cannot be imputed to an employer who provides machines and appliances such as are generally used in his line of business. The appellee, Butler, claimed that he had contracted silicosis because of his employment with the appellant company, engaged in grading and pulverizing sand. He charged that the company had failed to use reasonable care to provide a proper ventilating system in its plant to provide him with proper masks, and to give him warning of the dangerous character of his work. There was impressive evidence at the trial, however, said the circuit court of appeals that Butler's employer had installed the most modern and efficient ventilating system available one that was superior to similar systems in the majority of industries like that which the employer operated. No evidence was offered by Butler to show that a better system was available and that his employer, in the exercise of reasonable care,

should have known of the existence of such a system and acted on that knowledge. The company had supplied Butler with a so called Willson sponge mask three months after he entered its service, but Butler contended that it should have furnished a better mask perhaps an air line mask, although the testimony for both parties was that masks of that character were still in the experimental stage and not in general use in the industry. A master, said the circuit court of appeals, must instruct and warn his servant as to dangers of which the master knows or ought to know and of which he knows or ought to know his servant is ignorant. But there was direct evidence that in the present case the defendant and his agents did warn Butler. The act of supplying masks constituted in itself such a warning.

Butler complained that his employer did not warn him of the disease-producing effect of the inhalation of silica dust, but even if this is true, it was not certain said the court, that the employer knew that disease was liable to follow or that he should have known of it in time reasonably to warn his workmen. No evidence was adduced by Butler to show that silicosis normally follows exposure to silica dust or to show what conditions produce the disease, or how long the disease takes to develop. The court found it difficult to believe that an employee of normal intelligence who works in dust has to be told that the inhalation of dust of any kind in large quantities is injurious. When such an employee is handed a mask and put to work with other men wearing masks, in a place equipped with artificial ventilators, that is a plain enough warning that dust is deleterious.

The judgment of the trial court in favor of Butler was reversed and the case remanded.—*Pennsylvania Pulverizing Co v Butler* 61 F (2d) 311

Evidence Presumption that Woman Is Capable of Childbirth Not Absolute—The presumption, said the United States court of claims, that a woman is capable of giving birth to issue so long as she lives is not absolute. Evidence may be received to show that a woman of 50, who seven years previously had her uterus, both fallopian tubes and both ovaries removed, is incapable of bearing children. Such evidence is admissible and is sufficient to overcome the presumption that she is capable of bearing issue.—*Provident Trust Co v United States* 2 Fed Suppl 472

Workmen's Compensation Acts Compensability of Pneumonia—In the course of his employment, a carpenter spent about an hour in a refrigerating room in which the temperature was from 10 to 20 degrees below zero. He developed pneumonia and died. His widow claimed compensation under the workmen's compensation act of Pennsylvania. The sole question to be determined, said the Supreme Court of that state when the case came before it on appeal, is whether death was caused by an 'accident' within the meaning of the act. The exposure, said the court, was not an accident. The ensuing chill was not a sudden and unexpected event a mere chance or contingency. It was a natural and usual consequence of entering and remaining so long in a room with a temperature from 10 to 20 degrees below zero. Compensation was therefore denied.—*Lacey v Washburn & Williams Co (Pa)*, 164 A 724

Society Proceedings

COMING MEETINGS

- American Society of Tropical Medicine Richmond Va Nov 15 17
- Dr Henry E Meleney Vanderbilt University School of Medicine
- Nashville Tenn Secretary
- Medical and Surgical Association of the Southwest El Paso Texas
- Dec 7 9 Dr W Warner Watkins Box 1587 Phoenix Ariz
- Secretary
- Society for the Study of Asthma and Allied Conditions New York
- Dec 9 Dr W C Spain 116 East 53d Street New York Secretary
- Southern Medical Association Richmond Va November 14 17 Mr
- C P Loran Empire Building Birmingham Ala Secretary
- Southern Surgical Association Hot Springs Va Dec 12 14 Dr
- Robert L Payne 142 York Street Norfolk Va Secretary
- Western Surgical Association Cincinnati Dec 8 9 Dr Frank R
- Teachenor 306 East 12th Street Kansas City Mo Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

18 535 802 (July) 1933

- Relation of Heredity to Cancer Occurrence as Shown in Strain 73 Studies in Incidence and Inheritability of Spontaneous Tumors in Mice. Thirty Second Report. Maud Slye. Chicago—p 535
- Influence of Hormones on Growth of Carcinoma Sarcoma and Melanoma in Animals. K. Sugura and S. R. Benedict. New York—p 583
- *Primary Osteoid Chondrosarcoma of the Lung. Report of Case. E. B. Greenspan. New York—p 603
- *Primary Carcinoma of the Ileum. J. M. Lynch. New York—p 610
- Exostosis of Mandible of Chicken Complicating Edema of the Wattles. G. M. Smith. New Haven Conn.—p 616

Osteoid Chondrosarcoma of Lung—Greenspan presents the history and necropsy observations of a case of primary osteoid chondrosarcoma of the lung in a woman of 35 arising from the bronchial mesodermal tissue. Clinically, the case is of interest because of the gradual occlusion of the main pulmonary artery, which caused progressive heart failure and a relative compensatory polycythemia. Chondrosarcoma metastasizing to the lung is not uncommon, but there was no suspicion throughout the entire course of the patient's illness of a new growth in any other region of the body, and necropsy did not reveal any other tumor that could have been regarded as primary.

Carcinoma of Ileum—A case of carcinoma of the ileum is reported by Lynch in a woman aged 32 who is apparently well six years after radical operation. There was sufficient clinical and radiologic evidence to warrant surgical intervention one year before the actual operation. The growth was much more extensive on the peritoneal than on the mucosal aspect of the ileum, recalling the well known fact that the size of a cancer of the rectum, as seen through the proctoscope is no criterion of its extent through or beyond the intestinal wall. The presence or absence of obstruction governs the procedure of treatment. If obstruction is present, therapy should in the first instance be directed to its relief. Here the intravenous administration of sodium chloride solution is of value. Thereafter enterostomy is of primary importance and may in suitable cases be combined with exteriorization of the affected loop in the first stage of a resection of the Mikulicz type. In the absence of obstruction, immediate resection of the affected loop if possible, should be done followed by a suitable anastomosis.

American Journal of Clinical Pathology, Baltimore

3 263 326 (July) 1933

- The Neutrophil in Pernicious Anemia. F. J. Heck and C. H. Watkins. Rochester, Minn.—p 263
- Sugar Metabolism and Blood Studies Following Vagotomy. J. Friedwald, M. Feldman, S. Morris and A. Ullman. Baltimore—p 271
- Idiopathic Jaundice. Report of Two Cases. H. A. Ball. San Diego Calif.—p 283
- Light Filtering Action of Blood Serum. G. L. Rohdenburg. New York—p 291
- Permanent Color Standards for Folin's Ferricyanide Sugar Method. W. D. Stovall, Marian Foote and M. S. Nichols. Madison Wis.—p 299
- Comparison of Relative Value of Intracutaneous Skin Test and of the Pathogen Selective Culture in Selecting Bacteria for Vaccines from Mixed Cultures. M. Solis Cohen. Philadelphia—p 305
- Idiopathic Poisoning of Methyl Alcohol. E. Scott, Mary A. Helz and C. P. McCord. Columbus Ohio—p 311

Selecting Bacteria for Vaccines—Solis Cohen studied eighty-four organisms, sixty-three that grew in the patient's blood and twenty-one that did not. He observed that there is practically no difference between the reactions produced by intracutaneous injections of organisms that grow in the patient's fresh whole coagulable blood and the reactions produced by

organisms that are killed by his blood. There seems to be no correspondence between the absence of bactericidal power in the blood of the host against a given organism and the production in that host of a positive reaction by the intracutaneous injection of such an organism. There probably is no relationship between hypersensitiveness in the host to the exogenous and endogenous toxins of a given organism and the pathogenicity of such an organism for that host. It is questionable whether intracutaneous tests can identify, in a mixed culture, the bacteria that are infecting the patient. Therefore intracutaneous skin tests are probably unreliable for selecting bacteria in the preparation of vaccines.

American Journal of Public Health, New York

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- Diphtheria Immunization in Private Practice. G. W. Anderson and G. H. Bigelow. Boston—p 655
- The Tuberculosis Movement Today. D. B. Armstrong. New York—p 663
- Smoke Abatement at Low Cost. M. M. Cohn. Schenectady, N. Y.—p 668
- Bacterial Content of Frosted Hamburg Steak. L. P. Geer. Cambridge, Mass. W. T. Murray and E. Smith. Gloucester, Mass.—p 673
- Plan to Obtain More Accurate Records of Infant Hygiene. Field Work. C. A. Sargent. Dover, Del.—p 677
- *Nonspecific Flocculation of Diphtheria Antitoxin Toxin and Toxoid and Its Bearing on the Flocculation Titer. J. F. Anderson, G. F. Leonard and A. Holm. New Brunswick, N. J.—p 681
- Prevention of Lead Poisoning in Industry. G. H. Gehrmann. Wilmington, Del.—p 687
- Agglutination in Diagnosis of Enteric Disease. Ruth Gilbert and Marion B. Coleman. Albany, N. Y.—p 693
- Relationship Between Health Officer and Nurse. Points of View of Health Officer. J. C. Geiger. San Francisco—p 697
- *Frozen Vegetables. R. P. Straka and L. H. James. Washington, D. C.—p 700
- Use of Glycerol as Preservative for Milk Specimens to be Examined for Hemolytic Streptococci. Ruth Gilbert and M. E. Clark. Albany, N. Y.—p 720
- Study of Bromthymol Blue Reaction in Freshly Drawn Milk. C. S. Bryan. East Lansing, Mich.—p 721

Flocculation of Diphtheria Antitoxin—The laboratory observations of Anderson and his associates show that (1) the flocculation value of a 2½ year old toxoid does not always correspond to the value established by animal tests but may give a low flocculation value and yet be of satisfactory antigenic activity, (2) the flocculation of a fresh toxin may also show occasional irregularities with high flocculation value and lower toxicity than expected according to the flocculation test, (3) precipitation of extracts of diphtheria bacilli readily takes place with homologous serum, often simulating a true flocculation and (4) toxin broth that accidentally had become contaminated during the production of diphtheria toxin showed higher flocculation values than the uncontaminated flasks. In view of these facts and as elutions of toxoid precipitates by disodium phosphate gave too high flocculation values, as floccules largely consist of magnesium ammonium phosphate, as pyrophosphates are present in meat and bacteria, and as pyrophosphates will flocculate with magnesium compounds, the authors carried out a number of flocculations to determine the influence of the pyrophosphates on the flocculation values. Diphtheria toxins, toxoids and antitoxins and different proteins have been mixed with sodium pyrophosphate, with magnesium sulphate and with colloidal magnesium and have been flocculated according to Ramon's method. They found that phosphates and pyrophosphates may under certain circumstances enhance the flocculation reaction of diphtheria toxin and antitoxin. This enhancement is expressed by an increased flocculation value and a decreased flocculation time. The flocculation reaction consists possibly of interlocking reactions of inorganic constituents of the toxin and serum of bacillary lipoproteins or nucleoproteins and serum precipitins, and of toxin and antitoxin. Flocculation may be a simple neutralization of toxin or toxoid and antitoxin, or it may be a combination of neutralization and a nonspecific reaction or a nonspecific reaction alone. The flocculation reaction is not always specific and therefore is not always a true measure of the antigenic value. The flocculation time is not always a true measure of avidity as determined by flocculation.

Frozen Vegetables—Straka and James examined seventy-two glass containers of frozen peas, twenty-four un inoculated, twenty-four lightly inoculated and twenty-four heavily inoculated with toxin (*Clostridium botulinum*). No toxin developed

in peas that were examined immediately after defrosting, and none developed in those defrosted and kept in the icebox for three days. Toxin was obtained from the spoiled peas in one of the twenty-four un inoculated containers, and botulinus cultures were recovered from eight. The spoiled contents of three of the twenty-four lightly inoculated containers were toxic and cultures were obtained (presumptive identification) from eleven. The twenty-four heavily inoculated containers showed five to be toxic after spoilage, and the organism was recovered (presumptive identification) from every container. All the toxic containers showed type B toxin. Of the organisms recovered from uninoculated containers, seven were type A and one was type B.

American Journal of Surgery, New York

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- Syphilis of the Stomach with Especial Reference to Errors in Diagnosis H A Singer and K A Meyer Chicago—p 1
 Traumatic Peptic Ulcer J Gerendasy Elizabeth, N J—p 12
 Penetrating Wounds of the Abdomen J D Martin Atlanta Ga—p 17
 *Fractures of the Femur Plea for Conservative Treatment A B Ilievitz Montreal Canada—p 21
 *Closed Method of Reduction of Fracture of the Patella Gatewood Chicago—p 28
 Review of Three Hundred and Forty Seven Gallbladder Operations D R Goldish and M G Gillespie Duluth Minn—p 30
 Papilloma of Gallbladder J R Phillips, Rochester Minn—p 38
 Gallbladder Disease in Young Children H K Shawan and E C Long Detroit—p 43
 Comparative Study of Leukocyte Count and Histopathology in Acute Appendicitis Value of Schilling Count in Establishing the Diagnosis Fanny Bell Warnock Champaign Ill—p 47
 *Value of Schilling Hemogram in Infections Preliminary Report Based on Thirty Five Hundred Cases A A Eisenberg and H S Nemens New York—p 56
 Relationship of Arterial Hypertension to Surgical Risk J S McQuiston and E V Allen Rochester Minn—p 72
 Radiation Therapy of Rectal Cancer G E Binkley New York—p 78
 Fibroma of the Colon Report of Case G W Crile and J C McClintock Cleveland—p 82
 Hemipneumothorax in Infants and Children Treatment by Heminephrectomy M F Campbell New York—p 85
 Follicular Cell Carcinoma of Ovary Report of Case S Eiss New York—p 97
 Hereditary Agenesis O C Perkins Brooklyn—p 104
 Myositis Ossificans Progressiva Clinical Notes and Roentgen Findings of a New Case P O Snook Lancaster Pa—p 111
 *Ventral Hernia New Technique in Its Repair V Farmer Hackensack N J—p 116
 Some Observations on Treatment of Pilonidal Sinus E J Ottenheimer Willimantic Conn—p 120
 Gonococcal Laparotomy Wound Infection R A Livendahl Chicago—p 123
 Receptacle for Collection of Bile When Prolonged Drainage Is Required J M McCaughan, Rochester Minn—p 126

Fractures of the Femur—Ilievitz believes that his experience with thirty-six cases of fracture of the neck of the femur, fifty-five intertrochanteric fractures, twenty-three fractures of the shaft and six of the lower end of the femur, with only one death on the second day of admission to the hospital, endorses the statement of Champagniere that more people die from immobilization than from injuries. Of the patients 80 per cent ranged between 65 and 93 years of age, the remaining 20 per cent being between the ages of 1 and 65. For the past seven years the author has used no anesthetics in any case of fracture of the shaft or of the upper and lower ends of the femur. By the utilization of his modified Bohler sling there was no necessity for plaster casts, skeletal traction, open operation, traction by means of weights, special tables, or plaster room and the patients could be treated at home as well as at the hospital. There was not a single case of nonunion in spite of early weight bearing nor were there any deaths due to pneumonia with the exception of the one death in a woman 79 years of age admitted in a moribund condition with multiple ailments.

Fracture of the Patella—Gatewood states that there is no fracture which lends itself to open reduction more uniformly than complete fracture of the patella. Frequently, however, the general condition of the patient or some local complication makes operative reduction inadvisable; therefore he has devised a closed method the principles of which are well established. In a case of infection in which it was necessary to resort to some closed method of treatment which would permit frequent changes of the dressings of the prepatellar region, a piece of moleskin adhesive 6 by 8 inches was prepared by fastening a

1 inch strip of heavy cardboard to one of the longer margins and setting into it several shoehooks, about five eighths inch apart. The adhesive was applied over the lower part of the thigh just above the infected area. The leg, fully extended, was encased in a cast. A large rectangular window was made in the patellar region. Similar hooks were attached to two other pieces of adhesive, which were incorporated in the cast just below the knee. Finally, strong rubber bands were strung between the upper and lower hooks. These kept the dressing in place and maintained sufficient tension to overcome contraction of the quadriceps extensor. They were tightened as often as necessary to keep up the tension. Although the method was primarily planned to prevent separation of the fragments until the infection had subsided, the result was so satisfactory that the method was continued for six weeks, after which active and passive movements were instituted.

Schilling Hemogram—According to Eisenberg and Nemens the main practical feature of the Schilling count is the recognition of the nonsegmented neutrophil cell, which normally constitutes from 4 to 8 per cent of all leukocytes. If an infection is progressing, the most dependable hematologic sign is the increase in the percentage of the band cells regardless of whether the total leukocyte count and the total neutrophil count rise or not, if the two latter counts are also high, it is a more favorable sign than when they are low, as this would point to the exhaustion of the hematopoietic activity of the bone marrow in other words the steady rise of the band cells points to an invasive progressive nature of the infection, to pus formation and, if postoperative, to an unfavorable termination if they rise during an "uneventful" convalescence, medical or surgical, a complication or a recrudescence is present, regardless of the clinical appearance since the latter may be delayed hours or days as compared with the rise of the band cells, e.g. an abscess formation following an operation, empyema following pneumonia, or acute exacerbation of a chronic mastoiditis. When such a rise in the band cells is accompanied by a fall of the total white blood cell or neutrophil count, or both, its unfavorable significance is greatly enhanced. The authors have seen central deep-seated pneumonias, retrocecal appendicitis and other "atypical" infections giving a typical hematologic picture days before they became "typical" clinically. They point out that the Schilling count is the ordinary blood count, except that the immature neutrophil cells are separated from the segmented or mature neutrophils and that the presence of occasional metamyelocytes or myelocytes should not be ignored, as it usually is in nonleukemic cases, but should mean an even greater danger than the rise of the band cells, the more immature the blood cells, the more severe the infection.

Ventral Hernia—Farmer describes a method for the repair of ventral hernia which is founded on a true anatomic basis. He has used fascia both living and dead, of varied sizes and shapes in varied ways in hernioplasty and has had opportunities of viewing the results. His conclusions are that large fascia strips of living structures do not become vivified. This is more obvious when the strip, whether living or dead, is not placed so that every centimeter is in close contact with living tissue having ample circulation. He has also observed that the results are more favorable when the strip is inserted deeply with tension through the tissue rather than being sutured in place on the surface. The recurrence is less frequent and the number of operable cases increased. In the postoperative care one need not be concerned about the tension on the suture line, abdominal binders are not needed and the patient is more comfortable. This method is founded on a true anatomic basis. If the patient is obese, it is advisable to make a large transverse incision, remove the portion of skin and subcutaneous fat and then make the incision through the muscle in the median line. When the sac is small it may be readily excised, the peritoneum sutured, the edges of the muscle thoroughly cleansed and brought together, and then an overlapping closure of the external sheath of the rectus can be made. If the hernia is large and the muscles are widely separated, an imbrication of the peritoneum and fascia is necessary, a plastic closure of the Mayo type bringing the cleansed peritoneum over the scarified fascia or rectal sheath. Much tension is required to cause the edges to overlap and it is here that strips of ox fascia placed transversely are of the greatest benefit. When the sac contains omentum

or intestine with numerous adhesions, it is well to enter the peritoneum above the sac, to insert the index finger into the abdominal cavity and with the finger as a guide carefully to dissect the rim of the sac on one side. The skin and subcutaneous tissue covering the sac may then be lifted and the dissection completed without injury to the intestine. It may be advantageous to leave parts of the parietal peritoneum attached to the intestine. In patients in whom the surgical risk is uncertain it is expedient to place strips of α fascia to strengthen the fascia and muscle layers and partly reduce the defect in the first operation. The second stage consists of dissection of the layers and an overlapping procedure.

Annals of Medical History, New York

5 315 408 (July) 1933

- A Sketch of the Career of Theodore Turquet de Mayerne. Physician to Four Kings Spagyric Therapist and Pioneer in Compilation of Elaborate Records of Clinical Cases. T. Gibson. Kingston Ont. Canada—p. 315
- De Ovarum Gallinaceorum Generationis Primo Fœordio Progressuque et Pulli Gallinacei Creationis Ordine. of Volcher Couter. H. B. Adelmann. Ithaca N. Y.—p. 327
- Pierre Joseph Desault. B. B. Beeson. Chicago—p. 342
- History of Purpura Haemorrhagica. H. W. Jones and L. M. Tocantins. Philadelphia—p. 349
- Goethe and His Theory of Colors. B. Chance. Philadelphia—p. 360
- Willard Parker. J. Ruhrah. Baltimore—p. 376
- Introduction to History of Women in Medicine. II. Medical Women of Middle Ages. Kate Campbell Hurd Mead. Haddam Conn.—p. 390

Archives of Internal Medicine, Chicago

52 1164 (July) 1933

- Diagnosis of Gonococcus Endocarditis. P. Solomon. D. Hurwitz. M. Woodall and Marion E. Lamb. Boston—p. 1
- Factors Causing Clinical Jaundice in Heart Disease. M. A. Kugel and S. S. Lichtman. New York—p. 16
- Premature Left Ventricular Beats from Electrical Stimulation of Exposed Human Heart. C. J. Lundy and C. M. Bacon. Chicago—p. 30
- Influence of Sclerotic Arterial Wall on Blood Pressure Measurements. Report of Case with Calcification of One Radial Artery. D. Ayman. Boston and A. Krakower. Montreal. Canada—p. 33
- Clinical Studies of Respiration. I. Plethysmographic Study of Quiet Breathing and of Influences of Some Ordinary Activities on Expiratory Position of Chest in Man. J. A. Greene. Iowa City and H. C. Coggeshall. Indianapolis—p. 44
- Question of Presence of Pressor Substance in Blood in Essential Hypertension. G. E. Wakerlin and H. D. Bruner. Louisville Ky.—p. 57
- Treatment of Neurosyphilis. Review of Results in Six Hundred and Eighty Patients. H. H. Hopkins. Baltimore—p. 66
- Hyperinsulinism. Report of Case of Spontaneous Hypoglycemia with Studies in Dextrose Tolerance. E. Ziskind. Los Angeles—p. 76
- Blood Cholesterol in Thyroid Disease. II. Effect of Treatment. L. M. Hurxthal. Boston—p. 86
- Physical Characteristics of Residues from the Small Intestine. H. Landt and Kate Daum. Iowa City—p. 96
- Influence of Sodium Nitrite on Cardiovascular System and on Renal Activity in Health in Arterial Hypertension and in Renal Disease. Soma Weiss and L. B. Ellis. Boston—p. 105
- Comparative Study of Blood Cultures Taken with Kendall and Routine Mediums. C. K. Friedberg. New York—p. 120
- Unusual Blood Group. Mable M. Wilhelm and E. E. Osgood. Portland Ore.—p. 133
- Clinical Significance of Latent Pulmonary Tuberculosis. F. M. McPhedran and E. L. Opie. New York—p. 137
- Function of Liver. Appraisal of Modified Dextrose Tolerance Test. II. T. Ricketts. Chicago—p. 147

Neurosyphilis.—Hopkins discusses the various forms of neurosyphilis in about 1200 patients, 200 of whom died while under observation and 480 of whom were observed for more than two years before lapsing. In early neurosyphilis the best method of treatment was an intensified form of routine antisyphilitic treatment with arsphenamine. In diffuse late neurosyphilis routine antisyphilitic treatment was much inferior to treatment with arsphenaminized serum subdurally administered triparanamide or malarin. The serum gave the best results but those given by triparanamide were almost as good and, owing to the much larger number of patients treated with it, the results probably represent a more nearly exact comparative estimation of its value. Malarin was the treatment of choice in dementia paralytica and dementia paralytica with tabes. In tabes the best results were obtained with malarin although those receiving triparanamide did almost as well and both types of therapy were far superior to routine treatment. Treatment with subdural injections of arsphenaminized serum was successful in arresting the process in numerous cases of optic atrophy which was advancing in spite of routine methods of treatment. The number of patients with purely vascular neuro-

syphilis was too small for analysis. The correlation between the clinical and the serologic improvement is roughly proportional to the duration and type of pathologic involvement. In early neurosyphilis, absolute agreement is found in a high proportion and in parenchymatous neurosyphilis in a correspondingly low proportion, of patients under treatment.

Sodium Nitrite.—Weiss and Ellis studied the effect of large therapeutic doses (from 1 to 5 grains [0.065 to 0.95 Gm.]) of sodium nitrite by mouth on ten normal persons on twenty-nine patients with primary arterial hypertension on five with glomerulonephritis and on nine in whom unilateral nephrectomy had previously been performed. The nitrite constantly produced symptoms of increase in cardiac rate and depression of blood pressure and renal function. No simple correlation was found between these factors except when they were markedly altered. A decrease of systolic blood pressure was the most frequently observed effect of sodium nitrite. This was caused probably by dilatation of certain parts of the arterial system. The greater the initial degree of arterial tonus the greater was the drop in systolic pressure. With arterial hypertension this was particularly evident. In five normal persons, sodium nitrite produced no change in the minute volume output of the heart. In five patients with arterial hypertension, this output was doubtfully reduced in three and reduced 15 and 32 per cent respectively, in two. In nine of these ten subjects there was a reduction of the cardiac stroke volume output, which reached 15 per cent or more in six. Sodium nitrite did not affect the basal metabolic rate of nine of the ten subjects, it possibly increased the rate in one. The effect of the nitrite on renal function was investigated thirty-five times by simultaneous determinations of the urinary output and urea and creatinine clearance tests. In no case was the renal activity improved. In fourteen instances there was no change in renal function, thirteen times it was definitely decreased, and on eight occasions it was questionably lowered. The authors discuss and correlate the physiologic changes that occur in the human cardiovascular system as a result of the action of sodium nitrite. They believe that the use of sodium nitrite in the routine treatment of arterial hypertension with the hope of maintaining the blood pressure at a relatively low level is illogical and may be dangerous.

Blood Cultures.—Friedberg made 103 blood cultures for seventy-seven patients suffering from a variety of febrile illnesses suggesting the presence of bacteremia. Simultaneously, flasks containing K medium were inoculated with blood from these patients. The K medium showed 4 per cent less positive results than the ordinary routine method. Compared with the individual flasks and plates used in the ordinary method the flask of K medium showed slight inferiority to some and slight superiority to other individual units. Other disadvantages were found in the difficulty and expense of preparing the medium and the greater time necessary before an organism could be identified. Repeated subcultures from the original K flask failed to show any invisible filtrable forms that could be converted to the ordinary state by transfer to solid medium as alleged by Kendall. There was no evidence in the cases studied to show that the clinical picture was due to a filtrable invisible form of an organism that did not show itself on the ordinary mediums. In several instances common organisms were found to pass through the Berkefeld filter suggesting the possibility that the K medium may have had some influence in impairing the efficiency of the filter.

Function of Liver.—Ricketts performed the modified dextrose tolerance test of the function of the liver as described by Althausen, Gunther, Lagen and Kerr on ten patients who were considered to have normal livers at the time of examination and on four patients with frank hepatic disease. Of the ten normal patients nine responded to the test by a drop in blood sugar to points considerably below the critical level for normal reactions and showed symptoms and signs of hypoglycemia. Of the four patients with frank hepatic disease three responded by definite chemical and clinical hypoglycemia. There was no essential difference between the behavior of the normal and the abnormal groups. The author suggests that the modified dextrose tolerance test in its present form is not a satisfactory measure of the metabolic function of the liver.

Archives of Ophthalmology, Chicago

10 1160 (July) 1933

- Role of Bacterium Granulosis in Trachoma P Thygeson Iowa City — p 1
- Intracapsular Operation for Cataract Report on a Fourth Hundred Successive Extractions A Knapp New York — p 6
- Is the Aqueous Humor a Dialysate? F H Adler Philadelphia — p 11
- Myopia in Alkalosis from Sippy Treatment J A Thorson, Dubuque Iowa — p 20
- Carbohydrate Tolerance in Elderly Patients with Cataract Study II D B Kirby and Renee von E Wiener New York — p 25
- Changes in Concentration of Dextrose in Human Aqueous Humor and Blood Study III D B Kirby and Renee von E Wiener New York — p 28
- Effect of Changes in Medium on Cultures of Lens Epithelium Study IV D B Kirby K C Estey and Renee von E Wiener New York — p 37
- Nature of Melanin of the Eye A C Krause Baltimore — p 42
- Solitary Neurofibroma of the Orbit J A MacMillan and W V Cone Montreal Canada — p 51
- Ioskiascopy Test Simplified J I Pascal Boston — p 58
- Simple Excision of the Globe Versus Simple Enucleation C P Cutler, Chicago — p 63
- Embolism of Central Retinal and Ciliary Arteries in a Case of Chronic Irid Nephrosis with Thrombosis of Innominate Artery I Goldstein and D Wexler New York — p 70
- Calcified Hyaline Deposits (Drusen) in the Optic Disk Associated with Pigmentary Changes in the Retina I Goldstein and I Givner New York — p 76
- Metastatic Carcinoma of the Eye and Brain I Finkelman Elgin Ill., and L L Mayer Chicago — p 83
- Antiquity of the Forms of the Transparent Media of the Eye II Modifications of the Light Train L D Redway Ossining N Y — p 91

Archives of Otolaryngology, Chicago

18 1144 (July) 1933

- Development of the Otic Capsule II Origin Development and Significance of Fissula Ante Fenestram and Its Relation to Otosclerotic Foci T H Bast Madison Wis — p 1
- Sarcoma of the Larynx F A Figi Rochester, Minn — p 21
- Spontaneous Cerebrospinal Otorrhea O R Kline Camden N J — p 34
- Treatment of Malignant Disease of Tonsil with High Voltage X Rays and Radium R McKinney Memphis Tenn — p 40
- Problems Concerned with Empyema of Petrous Apex S J Kopetzky New York — p 47
- *Benign Tumors of the Tonsil with Especial Reference to Fibroma H J Hara Los Angeles — p 62
- Suspension Cinematography of the Larynx F E LeJeune New Orleans — p 70

Benign Tumors of the Tonsil—Hara mentions as benign growths of the tonsil papillomas, angiomas, lymphomas adenomas, fibromas, lipomas, chondromas, teratomas and various forms of mixed tumors and states that the tonsillar fibroma may be sessile or pedunculated. In the series that he reviews, seven tumors originated on the right and fourteen on the left tonsil, and in five cases there was no statement as to the site of attachment. The patient in whom these tumors appeared were of various ages. The patient in the case that he reports was the youngest, being $7\frac{1}{2}$ years. The color of the tumor is a pale pinkish rose. Its consistency is normally hard and woodlike. The diagnosis offers no difficulties. The prognosis as to life is excellent. The rational method of treatment is the surgical removal of the tumor.

Archives of Pathology, Chicago

16 1176 (July) 1933

- Relation of Serum Calcium to Pathologic Calcifications of Hypervitaminosis D A Ham Toronto Canada and B C Portuondo St Louis — p 1
- Experimental Infarction of Interventricular Septum of Canine Heart Anatomic and Electrocardiographic Study with a Note on the Nerve Tissue of the Conduction System E M Barton and H H Greenwood Chicago — p 15
- *Relationship Between Trauma Sustained at Birth and Encephalitis in Children S R Rosenthal Chicago — p 33
- *Congenital Valves of Posterior Urethra in Twins I Davidsohn and C Newberger Chicago — p 57

Trauma and Encephalitis—Rosenthal reports three cases, in children of one family, in which the relation of injuries sustained at birth to encephalitis is demonstrated. He suggests that many of the idiopathic and atypical forms of encephalitis in children are due to the superimposition of a mild infection or intoxication on foci of lowered resistance in the brain, secondary to insults sustained at birth. He explains colloid deposits and deposits of calcium in the brains of children as sequelae to injuries sustained at birth. One of his cases showed an inflammatory process while the other two showed toxic

ones superimposed on traumatic lesions sustained at birth. The attacks (transient paralysis, vomiting, mental disturbances), demonstrate the susceptibility of the brains of such persons to infections and toxic irritants.

Valves in Posterior Urethra in Twins—Davidsohn and Newberger observed identical valves in the posterior urethra in twins. They produced an obstruction to the urinary flow, with the usual clinical and anatomic consequences. The clinical picture and the pathologic changes were identical in these twins. The authors suggest the term "pericollicular valves," with an anterior and a posterior subvariety, to replace types I and II of Young's classification. They base the modification on the apparent anatomic and suggestive embryologic relationships to the colliculus seminalis.

Archives of Surgery, Chicago

27 1226 (July) 1933

- Physiology of Colon L M Larson and J A Barger Rochester Minn — p 1
- Treatment of Secondary Anemia in Gynecologic Patients H S Everett Baltimore — p 51
- *Epidermoid Cysts of the Spleen H A Shawan Detroit — p 63
- Invagination of Appendical Mucosa Producing Symptoms Resembling Appendicitis E Shute Chicago — p 75
- Osteomyelitis of Skull A O Wilemsky New York — p 83
- *Postoperative Nutritional Edema C M Jones and Frances B Eaton Boston — p 159
- Diagnosis of Surgical Tuberculosis Comparison of Diagnosis by Inoculation of Guinea Pigs and by Culture J E Blair and Frances A Hallman New York — p 178
- Backache Lumbago Pain in the Lower Part of the Back L W Ely San Francisco — p 189
- *Bone and Calculi in Collecting Tubules of the Kidney C B Huggins Chicago — p 203
- Relation of Trauma to Rupture of Hollow Abdominal Viscera J V Reed Indianapolis — p 216

Epidermoid Cysts of the Spleen—Shawan states that only four reported cases of epidermoid cysts of the spleen and one unpublished case recalled by Lubarsch have been described in young people. Sex seems to play no especial part as two occurred in boys and two in girls. Complete and repeated microscopic examinations of all splenic cysts may add to the number of these epidermoid cysts. Tumor and distress in the splenic region coupled with elimination of other tumors by various clinical methods especially roentgenoscopic studies, facilitate the correct diagnosis of large splenic cysts. Splenectomy the most satisfactory treatment in large unilocular cysts, is facilitated by a preliminary evacuation of the contents of the cyst provided the presence of parasites has been ruled out. A ten year follow-up in the author's case shows no apparent morbidity after splenectomy. One case of normal gestation in a splenectomized woman is added to those previously collected.

Nutritional Edema—Jones and Eaton present data on thirty-four patients who developed a critically low amount of serum protein following routine surgical procedures. Some degree of edema was present in most of them. They suggest that usually such low values for serum protein and the consequent edema are the result of undernutrition which may take place both before and after operation. The reduction in the intake of protein is probably the most important element in their pathogenesis. Additional factors in the production of these complications may be the administration of excessive amounts of fluid and salt after operation, especially by the intravenous route, profuse surgical drainage, the general effects of sepsis, loss of serum protein by massive hemorrhage, and a retention of base due to temporary disturbance of renal function. The authors discuss the possibility of the occurrence of edema even in the presence of apparently normal values for serum protein and that of a nutritional edema of the intestinal wall as a cause of a poorly functioning gastro-enterostomy. They suggest the advisability of performing a preliminary jejunostomy for feeding purposes in patients who are obviously undernourished and who require major gastric surgical procedures. If intestinal edema develops after a surgical procedure, it may be combated by attempting to raise the serum protein by limiting the intake of water and salt or alkali, or by producing a diuresis. When it is impossible to feed large amounts of protein repeated transfusions are of some immediate benefit. Transfusion of plasma alone would be the most advantageous if such a procedure could be carried out. The most efficient methods of

producing a diuresis consist in the administration of the mercurial diuretics intravenously, or by the intravenous administration of concentrated solutions of dextrose. Digitalis is of no value.

Bone and Calculi in Kidney—Huggins describes a type of bone formation located in the medulla of the human kidney and associated with calculi in the collecting tubules. In the previously reported cases of ossification in the human kidney, the bone was found in close association with the pelvis. The origin of the bone is of interest from a theoretical standpoint. The author made a search for areas of mucosa of the renal pelvis in close association with the bone, but found none, so that it was necessary to discard the idea that the bone arose as a result of an epithelial stimulus. The bone in each case was in immediate proximity to stone formation, and there were many locations where direct union occurred between the bone and stone. This is considered strong evidence that the bone formed in a somewhat similar way to the histologic picture of creeping substitution in which there is invasive replacement of aseptic dead bone by new living bone. The point of greatest theoretical interest is that in the present cases the process is a creeping substitution of stone by bone. This is considered good evidence that accumulation of calcium salts that are of difficult solubility can provide a stimulus for bone formation in a certain connective tissue. As Phemister and Hellstrom emphasize, it is probable that bone formation in kidneys containing calculi occurs more frequently than the literature indicates.

Arkansas Medical Society Journal, Little Rock

30 19 58 (July) 1933

Annual Address W H Mock Prairie Grove—p 19
Aortic Regurgitation C Jamison New Orleans—p 21

Canadian Medical Association Journal, Montreal

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President's Address to the Canadian Medical Association A Primrose Toronto—p 1

Nervous Control of Gastric Secretion and Effect of Vitamin Deficiency on Its Production B P Babkin Montreal—p 5

Isolation of Brucella Abortus from Ice Cream R Thompson Quebec—p 9

*Association of Diabetes Mellitus and Pernicious Anemia E M Watson London Ont—p 11

*Infestation with Strongyloides Stercoralis Associated with Severe Symptoms F T Cadham Winnipeg Manit—p 18

Anatomy and Physiology of Coronary Circulation T H Belt Toronto—p 19

Value of Medicinal Charcoal (Carbo Medicinalis C T) in Medicine G H W Luers and V E Henderson Toronto—p 22

Diaphragmatic Hernia W H Dickson Toronto—p 24

Lateral Cervical Aberrant Thyroid E M Eberts Montreal—p 32

Anencephaly in Identical Twins J E Josephson Kingston Ont and K B Waller Rockwood Ont—p 34

Acute Phlegmon of Stomach and Duodenum A V Greaves Hong Kong China—p 37

Prophylactic Oral Vaccine in Bacillary Dysentery Preliminary Report E P Johns and S C Chalk London Ont—p 40

*Unusual Onsets of Multiple Sclerosis with Especial Reference to Early Paresthesias J Saucier Montreal—p 44

Puerperal Sepsis W A Dafoe Toronto—p 46

Cardiac Roentgen copy M C Morrison London Ont—p 51

Discussion on Hemochromatosis Report of Case C B Rich Provost Alta—p 56

Atypical Clinical Aspects of Syringomyelia Importance of Sympathetic Troubles Roma Amyot Montreal—p 60

Diabetes Mellitus and Pernicious Anemia—The three cases of diabetes concomitant with pernicious anemia presented by Watson bring the total up to seventy-nine. Correlating the tendency to low or absent gastric hydrochloric acid in diabetes with the fact that achlorhydria is of prime importance in pernicious anemia affords some explanation why there may be a tendency for the latter disease to develop as a complication of the former. The actual role of the so-called duodenal hormone in carbohydrate metabolism has not been definitely established but assuming that it does exist and that its function is to stimulate the secretion of insulin by the islet cells of the pancreas as postulated by Laughton and Macallum, lowered carbohydrate tolerance might be caused either by excessive production of this hormone or by its deficiency. The latter complication is a possible accompaniment of the achylia gastrica that occurs in pernicious anemia. The rapid emptying rate of the stomach in pernicious anemia may allow for excessive

stimulation of the hormone leading to fatigue and ultimate functional breakdown of the pancreatic islets, in accordance with the theory of diabetes advanced by Macallum. These factors, acting together with the rapid absorption of sugar from the intestinal tract, supply a sequence of circumstances that well might lead to a state of abnormal carbohydrate metabolism. The facts adduced from the recent literature relative to the clinical association of diabetes and pernicious anemia suggest that gastric analysis should be included in the routine investigation of patients with diabetes mellitus and that careful blood examinations should be made from time to time for evidences of the advent of pernicious anemia, especially in patients with low or absent gastric hydrochloric acid. Likewise, patients with pernicious anemia should be examined for signs of disturbed carbohydrate metabolism.

Infestation with Strongyloides Stercoralis—Cadham reports a case of severe Strongyloides stercoralis infestation in a patient who responded favorably to medication with thymol, evidently the parasite was eradicated, yet several observers claim that frequently no relief, or at best but a temporary beneficial result, is obtained by the use of this drug. DeLangen suggested the use of gentian violet, since the adult parasitic worm is susceptible to its toxic effect. The dye is given in coated tablets by mouth over a period of several days. Faust reports the beneficial results obtained in 200 patients suffering from strongyloidosis, to whom the dye had been administered. He speaks highly of this method of treatment. In the case reported by the author, the patient presented the symptoms characteristic of a severe Strongyloides stercoralis infestation—intermittent attacks of diarrhea associated with neurasthenia, epigastric distress and recurring urticaria together with progressive anemia, some edema and extreme emaciation. The presence of the parasite was finally disclosed, but exhaustive examination failed to reveal any concomitant infection.

Vaccine in Bacillary Dysentery—Johns and Chalk have successfully controlled bacillary dysentery, endemic in one ward of a mental hospital, by the oral administration of dysentery vaccine. The preparation and administration of the vaccine is simple, and no reactions were encountered. The vaccine was prepared with the Flexner strains of Bacillus dysenteriae isolated from the patients in the ward. Large flasks of nutrient broth were heavily seeded with a growth of twenty-four hours from agar slants and were incubated for four days at 37°C. The organisms were then killed by heat and the suspension of dead organisms in broth was used directly, no preservative being added. There was no preliminary preparation of the patients, and the vaccine was given in place of the evening meal. Five doses were given in six days. The dose on the first day was 10 cc, on the next three days 20 cc each day, on the fifth day no vaccine was given, while on the sixth day the final dose was 40 cc. The immunity produced is not permanent but is effective for at least one year. The administration of dysentery vaccine by mouth is followed by the appearance of demonstrable agglutinins in the blood serum. It appears probable that the method is worthy of wider application and could be used successfully in other gastro intestinal infections.

Multiple Sclerosis and Paresthesias—Saucier fully endorses the opinion of Guillain as to the frequency of the rapid onset of the disease as compared with the slowly developing malady described by Charcot. The unusual onsets are obviously not to be found in the chronic form of the disease. The acute aspects of disseminated sclerosis are apt to puzzle the observer. The symptoms are capricious and easily misinterpreted and one will frequently be misled if one does not look at once for disseminated lesions and for fine and unobtrusive indications of the disease such as minute pyramidal, vestibular and cerebellar dysfunction. Even if apparently trivial and apparently not fitting into the ensemble the fact of the dissemination of infected foci is tremendously important. The author reports four cases of multiple sclerosis with unusual onsets which embodied the following symptoms: a slight nystagmus, discrete pyramidal or cerebellar signs, polymorphous and changeable localizations and a capricious course of evolution. Other ways of reaching diagnostic evidence may be available but the clinical picture is so typical that no experienced clinician should be misled. The

real difficulty arises when such symptoms are absent or so discrete as to baffle the observer. In such instances, complete anamnesis should bring out evidence of early manifestations, such as the paresthesias. Even if they did occur several years before, they should be given their full value. They ought to be considered as the most constant and earliest of all the symptoms of multiple sclerosis.

Canadian Public Health Journal, Toronto

24 305-354 (July) 1933

- The Health Officer's Present Responsibility J. W. Fraser, Kitchener, Ont.—p. 305
Dietary Standards E. W. McHenry, Toronto—p. 308
Social Aspects of the Venereal Disease Problem in Canada T. S. Parney, Ottawa, Ont.—p. 316
What Becomes of Sewage Discharged into Surface Waters G. G. Rasmith, Toronto—p. 321
Botulism: Clinical Notes on Three Cases in Ontario A. J. Macklin, non Zurich, Ont.—p. 328
Extramural Care of the Mentally Ill R. M. Franks, Toronto—p. 330
Serologic Diagnosis of Brucellosis C. A. Mitchell and F. A. Humphreys, Hull, Que.—p. 337

Delaware State Medical Journal, Wilmington

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- George Washington the Physical Man G. T. Stephenson, Wilmington—p. 151
Undulant Fever: Report of Unusual Case S. J. Tilghman, Easton, Md.—p. 156
The Profession of Nursing M. A. Tarumianz, Farnhurst—p. 159

Florida Medical Association Journal, Jacksonville

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- *Treatment of Hemophilia with Ovarian Extract: Report of Two Cases J. S. Spoto, Tampa—p. 9
Are the Seeds of the Tung Oil Tree Poisonous When Eaten by Man or Animal? H. E. Palmer, Tallahassee—p. 13
*Plastic Operation for Cure of Urethral Stricture: Further Report M. Stern, DeLand—p. 16
Does Quinine as Used in Induction of Labor Injure the Ear of the Fetus? H. M. Taylor, Jacksonville—p. 20

Treatment of Hemophilia with Ovarian Extract—Spoto reports two cases of hemophilia treated with ovarian extract. He is of the opinion that the same hormone may prove of definite value in the treatment of hemorrhagic disease of the new-born. Ovarian therapy seems to be specific in its action and will afford relief from symptoms as long as sufficient quantities are administered to make up for the sex hormone deficiency in the hemophilic person. One of his patients was given, subcutaneously, 1 cc of ovarian extract daily for a period of twelve days. Twenty-four hours after beginning treatment, the bleeding had decreased considerably and by the following day had ceased entirely. A blood analysis showed hemoglobin, 47 per cent, erythrocytes, 3,300,000, the coagulation time was seven minutes, and the prothrombin time was sixteen minutes. At the suggestion of Birch, the patient was put on ovarian substance by mouth, taking 15 grains (1 Gm.) in divided doses daily.

Plastic Operation for Urethral Stricture—Stern devised a means for the radical cure of stricture at the bulb by means of a plastic operation. The patient is placed in a lithotomy position. An inverted V incision is made, the apex of which corresponds to a point about an inch above the position of the beak of the staff in the urethra, its lower arms extending nearly to the ischial tuberosities. The skin flap is dissected carefully so as not to injure the thin muscle layers overlying the corpus spongiosum. The bulbocavernosus muscles are separated from above downward in a median line carefully escaping the corpus spongiosum. A hemostat is so placed as to grasp the insertion of the corpus spongiosum and the transversus perinei muscles on either side and an incision is made mesial to the hemostats, leaving a muscle stump attached to the corpus spongiosum. The elevation of the corpus spongiosum from the triangular ligament and from the urethra itself is easily accomplished with the aid of scissors. This procedure is carried as far as may be necessary, exposing that portion of the urethra in which the staff is arrested and for a short distance above it. The strictured urethra is now exposed and the tip of the staff when pressed down causes the urethra below the point of engagement to pucker in advance of it. Two Allis clamps grasp the urethra, one above the strictured area and the other well below

it. A linear incision in the midline is made between these two points, opening the strictured area. Allis clamps are attached to the free edges exposing the interior of the urethra, bringing into view the beak of the staff and the filiform. These two lateral flaps are removed with scissors, leaving an ovoid opening in the urethra. A rubber catheter, size 22 F., is inserted into the bladder and the filiform is removed. The open end of the catheter is slipped over the beak of the staff and with drawn through the urethra. The urethra is repaired and all structures are replaced in their normal positions. The corpus spongiosum is attached to the superficial layer of triangular ligament by two sutures of fine catgut. A single suture is so placed as to bring the two bulbocavernosus muscles and transversus perinei muscles in apposition to the muscle stump remaining on the corpus spongiosum. This suture includes the levator ani, which frequently drops away when the transversus perinei muscles are severed. When this suture is tied the structures are restored to their original positions and the union of the bulbocavernosus muscles completes the muscular repair. The skin flap is replaced. The corpus spongiosum is restored to its position over the urethra and fixed by its extremity to the triangular ligament. Close apposition may be expected in a week or ten days while the catheter remains in the urethra. After the expiration of this time no urinary leakage is to be expected and the patient is permitted to void normally.

Georgia Medical Association Journal, Atlanta

22 239-278 (July) 1933

- Further Observations on Pathogenic Yeasts J. C. Norris, Atlanta—p. 250
Differential Diagnosis of Diseases of Right Colon J. W. Larimore, St. Louis—p. 254
Convulsions in Infancy and Childhood W. C. Boswell, Macon—p. 267

Johns Hopkins Hospital Bulletin, Baltimore

53 164 (July) 1933

- Renal Infections Associated with Prostatic Obstruction H. H. Young, Baltimore—p. 1
Effect of Insulin Injections on Serum Inorganic Phosphate in Normal and Suprarenalectomized Dogs R. Ellsworth and A. Weinstein, Baltimore—p. 21
*Physiologic Studies Following Extirpation of the Right Cerebral Hemisphere in Man W. E. Dandy, Baltimore—p. 31
Treatment of Meniere's Disease by Section of Only the Vestibular Portion of the Acoustic Nerve W. E. Dandy, Baltimore—p. 52
*Two Useful Staining Methods for Human Hypophysis F. B. Kindell, Baltimore—p. 56

Extirpation of Right Cerebral Hemisphere in Man—Dandy studied the physiologic results following extirpation of the entire right cerebral hemisphere, i. e., external to the basal ganglia, in three cases. One of these patients lived two years and two months, one six months and the other one died ten days after the operation from meningitis. The surviving patients were always perfectly oriented as to time, place and person. Their memory for immediate and remote events was unimpaired. They could read, write and compute without error. The author does not say that the mentality of the patients was normal, but rather that abnormalities have not been disclosed. The best proof of a normal mind was denied these unfortunates because of hemiplegia that is to carry on in the competitive world. Both patients were always coherent, at no time were there abnormal fears, delusions, hallucinations, confabulations, expansive ideas or obsessions. Neither was there undue melancholy or euphoria. One of the most interesting observations was the preservation of function in the domain of the cranial nerves, i. e., evidence of autonomy of these nerves. None of the extraocular movements were altered or impaired in the slightest nor was there nystagmus at any time in either patient. Function in the trigeminal and facial nerves was preserved. Some movement in the leg of both patients was preserved. There were no contractures such as one sees in the many clinical examples of hemiplegia.

Staining Methods for Hypophysis—Kindell describes two methods that have been found to stain differentially in the same section the eosinophil and the basophil cells of the human hypophysis removed at necropsy. The fixation permits the preparation of sections through the whole hypophysis rather than from bits of tissue. The first using fuchsin-methyl blue is a modification of one of Bailey's methods with the substitution of aqueous methyl blue for acid violet. The methyl blue was

found to have less decolorizing action on the fuchsin and with necropsy material a greater affinity for the basophil granules. The second method, the eosin-methyl blue stain, has been referred to by Romeis and by Collin and Mann. The differentiation of the first method has been found preferable.

Journal of Bacteriology, Baltimore

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- Use of Reduced Iron for Cultivation of Anaerobic Organisms J P Scott and C A Brantly Manhattan Kan—p 1
Effect of Reaction of Medium on Characteristics of Bacteria I General Presentation of Problem and Results Obtained with *Bacillus Coli* Communion *Salmonella* Enteritidis and *Pseudomonas Pyocyanea* Esther Wagner Stearn and A E Stearn Columbia Mo—p 9
Id II Behavior of *Bacillus Subtilis* Esther Wagner Stearn and A E Stearn Columbia Mo—p 37
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Study of Variation in Chromogenic Asporogenous Yeast Laila Punkari and A T Henrici Minneapolis—p 125

Journal of Bone and Joint Surgery, Boston

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Os Subtibiale Inconstant Bone Over Tip of the Medial Malleolus P W Lapidus New York—p 766
Tuberculosis and Poliomyelitis E Rumshina Kharlov U S S R—p 772
Isolated Fractures of the Os Magnum and Trapezium E I Greene and I F Miller Chicago—p 775
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Iwings Tumor Unusual Case A S Papadopoulos Athens Greece—p 789
Cartilage of Outer Condyle of Femur as Foreign Body in the Knee Joint C A Carlucci New York—p 796
Fibula Transplant to Repair Defect in Radius R D Schrock and H F Johnson Omaha—p 800
Improved Clavicle Splint M O Henry Minneapolis—p 809

Fractures of Vertebrae—Mitchell is of the opinion that isolated fractures of the articular processes of the lumbar vertebrae occur as a result of indirect violence. A severe force causing the spine to be flexed both forward and laterally and at the same time rotated produces impingement of the subjacent articular processes. The capsules which are attached to the margins of the articular processes are placed under considerable tension. If the force is sufficient the combined action of impingement and capsular pull will produce a fracture of the tip of one or both of the subjacent processes. The author reports eight such fractures in five patients, three of whom

exhibited double lesions. An analysis of the lesions reveals that five of the fractures involved inferior processes. The processes of only the second, third and fourth lumbar vertebrae were involved, possibly owing to limited mobility in this region as compared with the dorsolumbar and lumbosacral joints. The location of the line of fracture varied from 0.3 to 1.2 cm in distance from the tip of the process. Conservative treatment gave satisfactory results with three patients who were observed some months following injury. Treatment consisted of a short period of recumbency, followed by physical therapy and the application of a support, such as a canvas belt or a Goldthwait back brace. Two patients did not respond to conservative treatment, and on these a spinal fusion was performed. At operation the involved processes were exposed, the fractured tips and the cartilage of the facets were removed, and a tibial graft was placed between the split spinous processes. Immediate relief of symptoms was noted in both patients following operation, and one patient has had no recurrence of symptoms in ten months. The other patient has remained symptom free since his operation three months ago.

Spinal Fusion—During the last nine years, Henry and Geist have used the following technic for fusion of the spine. Shoulder rests are used to raise the chest slightly from the operating table. A midline incision, 12 inches in length, is made, centering over the area to be fused. The cut edges of the skin are iodized, before being walled off with towels. The fascia and the supraspinal ligaments are incised longitudinally, together with a portion of the interspinal ligaments, so as to expose freely the tips of the spinous processes. At least two segments above and below the affected area are fused. With a broad raspator, the periosteum and muscles are detached from the spinous processes and laminae as far laterally as the articulations. Hemorrhage is controlled by packing. The entire area to be fused is exposed by laterally retracting the spinal muscles. The laminae are cleaned of all soft parts from the bases of the spinous processes out to the articulations. By means of a hand chisel, the spines being used for leverage, small thin shavings of bone are removed from the laminae until their exposed surfaces are entirely raw. The spinous processes with their intact interspinal ligaments are clipped off at their bases with bone cutting forceps. One spinous process at each end of the field is cut obliquely to avoid disfiguring bumps. From the subcutaneous surface of the tibia, exposed by a second operating team, multiple chip grafts are removed with a chisel. During their collection, the chips are placed in a cup of physiologic solution of sodium chloride. The cup of chips is kept warm in a pan of sterile water. A large handful of these chips is needed. The chip grafts are distributed evenly over the spinal bed and pressed into contact with the raw laminae and one another by the use of the broad blade of a raspator. The periosteum the muscles, the remaining supraspinal ligament and the dorsal fascia are sutured over the grafts with interrupted chromic catgut. The subcutaneous fat is closed with continuous plain catgut and the skin with dermal catgut. The incision is iodized and antiseptic surgical varnish is painted around the wound decreasing the danger of wound contamination by perspiration. The stitches are removed after twelve days and a close fitting plaster-of-paris cast is applied on the Goldthwait irons. After ten weeks the patient is fitted with a brace of the Osgood type, having axillary crutches, which is usually worn for about three months.

Os Subtibiale—Lapidus reports two cases of bilateral extremely rare inconstant bone, the os subtibiale one in an adult the other in a child. An accessory center of ossification over the tip of the medial malleolus is occasionally observed in children appearing around the age of 6 and fusing at about the age of 13. This accessory center and the os subtibiale seem to be two different entities though they may have some relation to each other. The first group may be classified as inconstant center of ossification or possibly an epiphysis of the medial malleolus somewhat similar to the one observed over the styloid of the fifth metatarsal. The cases observed in children seem to fall in this group. The second group of cases, all observed in adults, are best fitted into the classification of an inconstant bone—os subtibiale. Accessory scaphoid or trigonum or accessory center of ossification of the adult patella may be considered homologous with os subtibiale.

Journal of Immunology, Baltimore

25 1120 (July) 1933

- Tissue Culture Studies on Relation of Tuberculin Reaction to Anaphylaxis and Arthus Phenomenon J D Aronson Philadelphia—p 1
- Urticarial Skin Reaction in Normal and Sensitized Guinea Pigs L S Pilcher 2d Boston—p 11
- *Complement Fixation with S and R Antigens and Serums of One Hundred Cases of Tuberculosis Christine E Rice J H Orr and G B Reed Kingston Ont. Canada—p 19
- Blood Grouping of Macacus Rhesus Including Comparative Studies of Antigenic Structure of Erythrocytes of Man and Macacus Rhesus I Buchbinder New York—p 33
- Existence of Antigenic Determinants of Diverse Specificity in Single Protein I Tyrosine and Histidine Diazo Arsenic Acids as Haptens S B Hooker and W C Boyd Boston—p 61
- Distribution of Virus of Polomyelitis in Cerebrospinal Axis of Monkeys M Brodie Montreal Canada—p 71
- Titration of Polomyelitic Virus Containing Tissue M Brodie, Montreal Canada—p 87
- Immunization Phenomena in Rabbits Vaccinated with Heat Killed Tubercle Bacilli Study of Cutaneous Reactions and Development of Bacteriotropin J Hughes Philadelphia—p 103
- So Called Serum Sickness in Rabbits Following Intravenous Injection of Various Foreign Serums Its Relation to Precipitins Deborah Khorazo New York—p 113

Complement Fixation in Tuberculosis—According to the studies of Rice and her associates, an examination of serums from 100 patients suffering from active pulmonary tuberculosis by routine quantitative methods of complement fixation has shown no consistent correlation between the clinical history and the antibody titer of the serum. The authors observed that tuberculosis serums do not all react equally well with carefully tested antigens prepared from S and R cultures of human tubercle bacilli. These two antigens are about equally efficient in detecting the complement-fixing antibodies in serums from cases of the chronic type, but the S antigen fixes specifically, in the presence of serum from the majority of acute cases twice as much or more complement than is fixed by the R antigen. Serum from cases of the intermediate type usually fall between these extremes. From the small number of cases studied, it would appear that the relative reactivity of serums with S and R antigens is more closely correlated with the activity of the tuberculous processes than is the actual concentration of complement-fixing substances.

Journal of Urology, Baltimore

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- Carbuncle of the Kidney V J O'Connor Chicago—p 1
- Hematuria N P Ruthbun Brooklyn—p 15
- *Excretion Urography with Neoskiodan T D Moore Memphis Tenn—p 27
- Effects of Pressure of Pyelographic Mediums D E Scott Greenwich Conn—p 39
- *Melanotic Sarcoma of the Adrenal Glands with Secondary Tumor in the Bladder Case R A McComb and D B Smith Toronto Canada—p 49
- Duplication of Ureters at Their Distal Ends One Pair Ending Blindly So Called Diverticula of the Ureters H L Kretschmer, Chicago—p 61
- Wooden Toothpick Found in Renal Pelvis at Operation Case Report F L Senger New York—p 75
- Formation of Bone in Cystotomy Scars L E Pierson and I E Nering Sioux City Iowa—p 83
- Infarct of the Prostate B S Abeshouse Baltimore—p 97
- Diverticula of the Urethra Report of Two Cases in Young Boys M F Campbell New York—p 113
- Studies of Skin Manifestations of Visceral Disease I Viscerosensory Aspect of Prostatovesiculitis L D Cady and R Deakin St Louis—p 123
- Time of Appearance of Urine in Rectum After Transplantation of Ureters in Sigmoid of Children Relation to Postoperative Course and Ultimate Results R E Cutts Rochester Minn—p 129
- Two Successful Prostatectomies in Cretins R C Hastings Quebec Que—p 133
- Comments on Enlarged Prostate and Endo Urethral Prostatic Surgery E S Pomeroy Salt Lake City—p 139
- Prostatic Calculus in Pseudodiverticulum of Posterior Urethra J R Vaughn Hot Springs Ark—p 143
- *Gas Gangrene Fatal Complication of Acute Gonorrheal Epididymitis Report of Case J F Balch, Indianapolis—p 149

Excretion Urography with Neoskiodan—Moore employed neoskiodan in fifty instances of excretion urography. He states that the substance does not provoke pain on injection. It is productive of shadows of the urinary tract of excellent density and detail. Its intravenous administration has been almost devoid of systemic symptoms. The volume of solution injected in the adult human being is small (20 cc.) and the quantity of substance only 7 Gm. The aqueous solution is stable. His experi-

ence thus far leads him to the impression that it more nearly approaches the ideal than any agent so far developed for excretion urography.

Melanotic Sarcoma of the Suprarenals—McComb and Smith report the case of a man, aged 65, who was operated on and a melanotic sarcoma removed from the bladder. Thirteen months later the patient died of circulatory failure. At necropsy a primary bilateral malignant condition of the suprarenals was discovered with multiple secondary melanotic growths in subcutaneous tissue. The pheochromocyte is considered a possible type cell of the growth.

Gas Gangrene and Gonorrheal Epididymitis—Balch presents a case of acute gonorrheal epididymitis that terminated fatally with an extensive gas gangrene of practically the entire trunk of the body. Although *Bacillus welchii* was never found either by smear or by culture, the small encapsulated gas forming bacillus yielded by cultures proved to be exceedingly fulminant. The entire urethra was found to be intact. The infection was a directly continuous process along the cord from the epididymus to the tissues of the abdominal wall. Another unusual feature of this case was the fact that the epididymus ruptured spontaneously and drained through the scrotum which is not the usual sequence of a gonorrheal epididymitis. In explanation of this infection, the author states that it seems probable that the sinus became contaminated in some manner with the gas bacillus, which rapidly terminated the patient's life.

Maine Medical Journal, Portland

24 125 142 (July) 1933

- The Acute Belly T M McCarthy Rumford—p 128
- Diagnosis and Treatment of Acute Intestinal Obstruction C H Stevens Belfast—p 130

Michigan State M. Society Journal, Grand Rapids

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- Schilling's Hemogram in the Anemic State E A Sharp and E M Schleicher Detroit—p 353
- Cancer C A Seybold Jackson—p 390
- *Contrasted Effect of Phenol and Merthiolate on Appendiceal Stumps J A MacLean Jr Ann Arbor—p 392
- Gumma of Pituitary Area Case Report R J Sisson Detroit—p 394
- Secondary Suppurative Parotiditis R F Weyher Detroit—p 396
- Observation on a Very Common Cause of Allergy I I Butcher Detroit—p 399
- Acromegaly Complicated by Diabetes Report of Case A Dubnové Detroit—p 400

Effect of Phenol and Merthiolate on Appendiceal Stumps—MacLean shows that tincture of merthiolate used on the appendiceal stump is far more effective than the commonly used phenol and alcohol technique. The appendices removed in twenty-five consecutive cases were doubly clamped with sterile hemostats. The appendix was then cut through between the forceps with a sterile knife. The bulk of the appendix was cut loose from the one hemostat leaving four available stumps, of which three were used in each case. One of these stumps was treated with phenol followed by alcohol, another was treated with tincture of merthiolate (1:2000) the third was left untreated. Cultures of the three stumps were then taken by smearing on fresh nutrient agar plates. In each case the solutions were applied with sterile applicators having a small twisted wad of cotton on the end. Tincture of merthiolate sterilized twenty-two of the twenty-five appendiceal stumps. Tincture of merthiolate is not injurious to the peritoneum.

Minnesota Medicine, St Paul

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- Pitfalls in Cardiac Diagnosis C N Hensel St Paul—p 457
- Distinction of Normal from Diseased Heart F A Willius Rochester—p 468
- Histologic Grading of Squamous Cell Carcinoma of Lip T C Erickson Minneapolis—p 473
- Mode of Spread of Carcinoma of Rectum J A Barger Rochester and L M Larson Minneapolis—p 478
- Vasomotor Response of Normal and Hypertensive Individuals to Thermal Stimulus (Cold) J F Briggs and H Oerting St Paul—p 481
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- Prepping Patients for Operation on Prostate Gland H C Bumpus Jr Rochester—p 489
- Intermittent Attacks of Fever Resulting from Partial Bronchial Obstruction with Minimal Pulmonary Symptoms P P Vinson and C A Mavum Rochester—p 492

Philippine Islands Med Association Journal, Manila

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West Virginia Medical Journal, Charleston

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Wisconsin Medical Journal, Madison

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Suppurative Pericarditis Two Cases E L Bolton Appleton—p 451
Chronic Sinusitis in General Practice W C Comee Green Bay—
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Acute Anterior Poliomyelitis Pediatric Problem T R Janney Mil
waukee—p 456
Pernoxion in Obstetrics H Olson and J Van Ess Milwaukee—p 459
Some Aspects of Brights Disease F D Murphy Milwaukee—p 465

Treatment of Morphism with Insulin—For the past year Howard has been relieving symptoms produced by the sudden withdrawal of morphine by substituting insulin for morphine. He found that there was an increase in the blood sugar of about 25 mg when withdrawal symptoms were first noticed by the patient. This varied with each patient, as the onset of such symptoms would be influenced by the individual psychologic factor. As a rule his patients would not allow withdrawal symptoms to persist any length of time, so in order to avoid desertion of the patient blood sugar observations prior to the substitution of insulin were followed for only a short while. The author believes that there is a decrease in the basal metabolic rate of about 10 per cent during the onset of withdrawal symptoms. Physical examination for the most part disclosed nothing except a drop in blood pressure concomitant with the withdrawal of morphine from an addict. Patients who have been taking more than 3 grains (0.2 Gm) a day over a period of six months or longer should have the dose gradually reduced by half before insulin is substituted for the morphine. This can generally be accomplished with little discomfort to the patient. The dosage of insulin varies with the requirements of each patient.

Yale Journal of Biology and Medicine, New Haven

5 509 588 (July) 1933

- Subsidence of Heart Signs in Pneumatic Fever A A Ehler New
Haven Conn—p 509
Preliminary Studies of Prostatic Overgrowth by Projectometry F M
Woode New Haven Conn—p 515
Kermiterius Jaundice of the Nuclear Masses of the Brain D T
Monahan New Haven Conn—p 523
The Pituitary Gland and Maintenance of Blood Pressure H Hen tell
New Haven Conn—p 531
Effect of Magnesium Sulphate on Brain of Fetal Rat F A Wies New
Haven Conn—p 545
Studies on a Possible Correlation Between Experimental and Clinical
Data Concerning Penetration of Infection to Serum Catharine A
Clayton and Mildred Hartman New Haven Conn—p 55
Type and Distribution of Pathology in Pulmonary Tuberculosis A
O'Brien and D'Alce Mellitus A J Crilly New Haven Conn—
p 59

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

56 109 232 (July) 1933

- Some Observations on Fifth and Seventh Cranial Nerves E A Car
michael and H H Woollard—p 109
Localization of Paths Subserving Micturition in Spinal Cord of Cat
F J F Barrington—p 126
Physiology of Micturition D Denny Brown and E G Robertson—
p 149
*Parenchymatous Cortical Cerebellar Atrophy (Chronic Atrophy of
Purkinje's Cells) H L Parker and J W Kernohan—p 191
Localizing Significance of Spasticity Reflex Grasping and Signs of
Babinska and Rossolimo Margaret A Kennard and J F Fulton
—p 213

Parenchymatous Cortical Cerebellar Atrophy—Parker and Kernohan outline the characteristics of parenchymatous cortical cerebellar atrophy. The histologic observations at necropsy are readily recognized. Clinically, the disease represents a slowly progressive cerebellar syndrome, beginning after middle age in both men and women. The diagnosis need not be difficult except when separating the clinical syndrome from other types of cerebellar degeneration. The failure to obtain a history of hereditary characteristics and the relative purity of the cerebellar syndrome are of assistance in the latter respect. Arteriosclerosis with infarction of the cerebellum produces a clinical course that is abrupt and intermittent and lacking the smooth progressive course of the disease outlined. The disease usually begins before senile changes are manifest, and the preservation of the intellectual faculties distinguishes it from a general senile breakdown of the nervous system. The disease is rare only twelve cases, including the one the authors report have been recorded in which necropsy has verified the identity of the process. Interest in the condition is created by the observation of a clear cut clinical syndrome and a specific destruction of cells in the cerebellum.

British Journal of Ophthalmology, London

17 449 512 (Aug) 1933

- Congenital Hyaline Membranes on Posterior Surface of Cornea Ida
Mann—p 449
Holes in Posterior Hyaloid Membrane of the Vitreous Report of
Case J R Anderson—p 460
Dislocation of the Ring of Soemmering Its Removal Notes on Its
Pathology F Toole—p 466
Retinal Visual Cells in Man and Fresh Water Fish M S Mayou—
p 477

British Medical Journal, London

2 43 88 (July 8) 1933

- Treatment of Allergic Diseases in General Practice G W Bray—
p 41
Otorrhea E Watson Williams—p 47
Some Notes on Industrial Anthrax Its Diagnosis and Treatment
T W Eurich—p 50
Improved Pattern of Revolving Spinal Bed E W H Groves—p 53
The Permeability of the Body to Infra Red Rays Preliminary Com
munication C B Heald—p 54
*Radium Burns J M Thomas—p 55

Radium Burns—Thomas gives the following points for the prevention and treatment of radium burns. 1 Radium treatment should not be given to patients suffering from cachexia, anemia, a white cell count under 5,000 per cubic millimeter, diabetes, nephritis, extreme obesity, advanced myocarditis, active pulmonary tuberculosis, marked arteriosclerosis, or any general debilitating disease, general sepsis, local inflammation or infection. 2 There must be no ulceration of the skin immediately prior to treatment. 3 The skin must be cleansed and lightly powdered before the plaque is applied and this must be repeated on alternate days to insure the absence of perspiration or fetid discharge irritating the skin. 4 The plaque should fit the area to which it is applied firmly and without friction. 5 It should be removed at once on the appearance of edema of the skin (clinical edema dose). 6 The part should be subsequently well powdered or calamine lotion applied. No soap should be used for two months. 7 Following radiotherapy, there should be no friction or irritating apparel. 8 The plaque should be removed as soon as the burn appears and the radium treatment discontinued. 9 The area should be cleansed thoroughly without soap and a dressing of eucalyptus and petro

latum (5 per cent) applied. This should be replaced by sterile liquid petrolatum at a later stage when healing is evident. 10 The use of powders should be avoided at this stage. 11 Rest should be secured. 12 When healing is intractable, it may be aided by an erythema dose of ultraviolet radiation. This method of treatment and the oily antiseptic dressing, which does not hurt the patient when it is removed, keeps the scar supple, promotes healing, lessens discharge and promotes epithelialization without undue granulation.

Journal of Physiology, London

78 339-474 (July 10) 1933

Apparent Viscosity of Blood Flowing in Isolated Hindlimb of the Dog and Its Variation with Corpuscular Concentration. S. R. F. Wintner and F. R. Winton.—p. 339

*Adrenals and Anesthetic Hyperglycemia. H. Banerji and C. Reid.—p. 370

Alpha and Gamma Curves in Slow Muscles. I. J. Ippique.—p. 381

*Influence of Ammonium Chloride on Adaptation to Low Barometric Pressures. C. G. Douglas, C. R. Greene and I. G. Kergin.—p. 404

Effects of Cholesterol and Choline on Deposition of Liver Fat. C. H. Best and Jessie H. Ridout.—p. 415

Observations on the Retinal Action Potential with Especial Reference to Response to Intermittent Stimulation. R. S. Creed and R. Grant.—p. 419

Size Changes in Seminal Vesicles of Mouse During Development and After Castration. Ruth Dennesly and A. S. Parkes.—p. 442

Effect of Intravenous Administration of Water on Rate of Urine Formation. W. H. Newton and F. H. Smirk.—p. 451

Presence of Novadrenine in Suprarenal Extracts. U. S. A. Euler.—p. 462

Apparatus for Production of Finely Dispersed Emulsions and Rate of Digestion of Fat by Lipase in Relation to Surface Area. A. C. Frazer and V. G. Walsh.—p. 467

Suprarenals and Anesthetic Hyperglycemia.—Banerji and Reid investigated the part played by the suprarenals in increasing the blood sugar during a thirty minute surgical anesthesia by the operative indirect and comparative methods. Rabbits and, for some observations, dogs were used. A series of thirty rabbits of about 1.5 Kg. was prepared by two stage aseptic operations under open etherization which aimed at decreasing or immobilizing the available epinephrine by double suprarenalectomy (group 1), unilateral suprarenalectomy with contralateral medullisuprarenalectomy (group 2), and double medullisuprarenalectomy (group 3). During surgical etherization the increase in blood sugar was invariably greatest in the intact rabbit, slightly less after the first and least after the second operation. The glycaemic response of the group 1 rabbits with signs of suprarenal insufficiency was noticeably small and doubly so two or three days before death. The glycaemic response of the group 1 rabbits that survived for long periods in good health was slightly less than for groups 2 and 3. The fasting blood sugar level was low (from 40 to 60 mg. per hundred cubic centimeters) in those rabbits with signs of suprarenal insufficiency. In groups 2 and 3 the average fasting blood sugar level was from 85 to 90, as compared with 105 to 115 for the intact animals. In the group 1 rabbits dying of suprarenal insufficiency the loss of weight was progressive and averaged 20 per cent at death. In the other groups the weight decreased slightly after the operations but remained more or less steady thereafter. In the indirect method, amytal partly inhibited the hyperglycemia occurring normally in ether or chloroform anesthesia in rabbits and dogs. Amytal checked the normal glycaemic response to morphine more than that to ether or chloroform. Amytal did not prevent epinephrine hyperglycemia of the normal order. The alkali reserve was decreased during ether or chloroform anesthesia but not with amytal. In the comparative method the anesthetic glycaemic response was greater in the group of rabbits that had shown previously a large increase in blood sugar in response to epinephrine than in the group less sensitive to it. The authors conclude that the suprarenals are concerned partly in increasing the blood sugar during a thirty minute surgical anesthesia with ether or chloroform.

Ammonium Chloride and Barometric Pressures.—Douglas and his associates observed the influence of the preliminary ingestion of a moderate dose of ammonium chloride in a subject exposed to a barometric pressure of 347 mm. in a steel chamber. After treatment with ammonium chloride the subject showed a lower alveolar carbon dioxide pressure and a higher oxygen pressure, a lessened degree of cyanosis, a slower

pulse rate and a greater ability to perform muscular work than in experiments in which no ammonium chloride had been taken. The authors discuss the bearing of these results on the question of acclimatization to high altitudes.

Journal of Tropical Medicine and Hygiene, London

36 201-216 (July 15) 1933

Chaulmoogra Oil and Its Derivatives in Treatment of Leprosy. J. W. Tomb.—p. 201

Lancet, London

2 113-168 (July 15) 1933

Influence of Endocrine System in Blood Disorders. D. Hubble.—p. 113

Does Insulin Cure Diabetes Mellitus? O. Leyton.—p. 120

Silica Content of Lungs. A. I. Shadden.—p. 123

Observations on Iichen Urticatus. H. Gordon.—p. 126

Endocrine System and Blood Disorders.—Hubble reviews the clinical and experimental evidence relating to the effect of the thyroid, the cortex of the suprarenals, and the anterior lobe of the pituitary on hematopoiesis. It is shown that the thyroid hormone stimulates the production of red cells and lymphocytes and depresses the output of granulocytes, the suprarenal cortical hormones stimulate the production of granulocytes and possibly also of red cells, while the basophil cells of the anterior lobe of the pituitary stimulate all types of circulating cells giving rise to a clinical picture of polycythemia. It is possible that the anterior pituitary produces this leukopoietic result indirectly through the thyroid and the suprarenal cortex. It is suggested that in hyperplasias and hypoplasias of the circulating blood cells a primary disorder of the endocrine system is the dominant etiologic factor. The clinical parallelism between exophthalmic goiter and chronic lymphatic leukemia is displayed with particular reference to Friedgood's work on the response of the basal metabolic rate, the pulse rate and the cell count in lymphatic leukemia to treatment with compound solution of iodine. It is concluded that the cause of lymphatic leukemia is a primary dysfunction of the thyroid. It is suggested that an excess of a suprarenal cortical hormone is responsible for myelogenous leukemia, and it is pointed out that polycythemia is a cardinal sign of hyperplastic conditions of the anterior lobe of the pituitary. Two hyperplasias of the bone marrow are considered, agranulocytic angina and aplastic anemia, and some further evidence is reviewed which also suggests for them an endocrine etiology.

Insulin and Diabetes Mellitus.—Leyton believes that insulin will cure diabetes mellitus if given in adequate amounts. An adequate dose of insulin must rest the pancreas. The dose of insulin will depend on the diet prescribed. In the majority of adults the acceptable diet is found to contain more than 150 Gm. of carbohydrate, and the amount of protein and fat differs greatly in different people. The lower the sugar content of the blood can be kept the greater the chance of the patient making a recovery. The idiosyncrasy of the patient has to be taken into consideration. The ideal is to arrange food and doses of insulin to keep the sugar content of the blood between 0.08 and 0.15 per cent throughout the twenty-four hours. In severe cases on a diet fairly rich in carbohydrate this may necessitate three or even four injections of insulin in the twenty-four hours for a time, it is a great exception for more than two to be needed for longer than six months. The interval between the injection of insulin and the meal must be determined by a trial in each case. After a meal rich in carbohydrates the sugar content of the blood will tend to rise and, if the dose of insulin is sufficient to prevent this exceeding 0.15 per cent, there is considerable probability that between three and four hours after the injection the sugar in the blood will fall low enough to cause symptoms. This is prevented by the patient taking a small amount of carbohydrate in a form that is easily assimilated about two and a half hours after the injection of insulin. The quantity must be determined by trial. Insulin may be hampered in its action by the patient taking substances that stimulate the cells of the islands of Langerhans to secrete, the most important of these is alcohol. Toxins elaborated by viruses or micro organisms may retard recovery. A patient who has had an acute attack of diabetes mellitus may have further attacks.

Medical Journal of Australia, Sydney

2 33 60 (July 8) 1933

- *Consideration of Problem of Functional Dyspepsias O A A Diethelm —p 33
- *Anesthesia with Prenarcosis by Morphine and Paraldehyde B B Garrett and E Gutteridge —p 46

2 61 96 (July 15) 1933

- Gynecologic Problems Considered in Light of Listerism F A McGuire —p 61
- Outline History of Education of the Blind J Barrett —p 69
- Quantitative Effect of X Rays on Mitosis in Mouse Carcinoma (M 63) W H Love —p 70

Functional Dyspepsias—Diethelm considers functional and nervous disorders of the stomach in three main groups (1) true functional cases, including the dynamic disorders characterized solely by disturbed motility or aberrations in secretion, either in quantity or in quality, (2) functional disturbances that are merely reflex manifestations, and (3) the gastric neuroses, the two main groups of which are the transference neuroses or psychoneuroses and the physoneuroses, also known as actual or somatic neuroses. Etiologic factors in successful therapy include mental and psychic factors, alcoholic excesses and sexual abuses. Other causes are dietary habits, excessive or injudiciously chosen foods, mental excitement during meals, dental factors and the excessive use of tobacco. Finally, trauma has to be considered if there is a possible traumatic neurosis. Of all gastric disorders, at least from 60 to 70 per cent are nonorganic. They are most common probably in the third or fourth decade. The chief symptoms are pain or distress, nausea, vomiting, belching and flatulence, heartburn, epigastric fulness and substernal pressure, disturbances of appetite and hunger, constitutional and nervous symptoms in the shape of headache, cardiac palpitation, insomnia, lassitude, mental depression or irritability, an inability to concentrate and certain vasomotor disturbances, such as sweating, faintness and dizziness. As a general rule actual pain does not occur and its absence helps to differentiate functional from organic disease. Vomiting, particularly if irregular, is, on the whole, more characteristic of functional disturbances of the stomach, unless there are signs of organic stenosis or pylorospasm. Headache is not a symptom of uncomplicated organic gastric disease. Habitus enteroptoticus is common. Gastric analysis does not assist much in the actual diagnosis of a functional or nervous dyspepsia, excepting when there are bizarre curves not suggestive of any organic lesion. Fractional test meal curves, however, are most helpful in the matter of therapy.

Prenarcosis by Morphine and Paraldehyde—According to Garrett and Gutteridge, morphine, paraldehyde and scopolamine in suitable dosage, are of value as basal narcotics for operations under local anesthesia. Morphine and paraldehyde, as a preliminary to the induction of general anesthesia are useful in relatively short operations and tide the patient over the painful recovery period. These drugs are unsuitable for cases presenting much pulmonary fibrosis or coronary sclerosis. An enema is given the night before the operation. This clears the rectum, provides space for the injection, diminishes the possibility of rejection of the paraldehyde solution, and assists absorption of the drug. An hour before the operation a hypodermic injection of 0.015 Gm of morphine and 0.65 mg of scopolamine is given. Fifteen minutes later, 0.25 cc of paraldehyde per kilogram of body weight is dissolved in ten times its volume of physiologic solution of sodium chloride and is injected slowly into the rectum. Inevitably before this injection has been completed the patient falls into a heavy sleep, often with slightly stertorous breathing and during the subsequent administration of the local anesthesia by injection as for instance, into the branches of the trigeminal nerve makes muttering noises and vague restless movements easily controlled. If the narcosis is not complete mild complaints are made of a vague kind but these cease rapidly on complete block of the painful stimuli and the patient again drifts off into a sleep. During the operative procedure it is unusual for any complaint to be made and these occur only at the time of crushing or chiseling or bone. On completion of the operation the patient is still sleeping and remains so for a variable period of from one to four hours. Among the authors' 143 cases there has been so far one death associated with the method.

This was a case of gross tuberculous involvement of the larynx with obstruction to breathing in which a tracheotomy was performed. The patient died of respiratory failure having an associated tuberculous and bronchiectatic involvement of the lung and asthma. The authors give a description of the effects and results of morphine, scopolamine and paraldehyde pre-narcosis on a few patients who deviated from the usual.

South African Medical Journal, Cape Town

7 353 384 (June 10) 1933

- Diabetes in Children Louise Tomory —p 355
- Eczema A Robins —p 359
- The British Pharmacopeia 1932 R S Lowden —p 366
- Blastomycosis of the Central Nervous System H G L Aneck Hahn —p 369
- Native Medicines in Natal F G Crwston —p 370
- The Significance of Angioid Streaks of the Retina T Wassenaar —p 372

7 385 416 (June 24) 1933

- Psyche and the Physiologists E G D Drury —p 387
- State Medical Service J A Tarlie —p 392
- Choriocarcinoma of the Testis with Metastases Followed by Recovery with Especial Reference to Method of Treating Malignant Disease Case W Welchman —p 395
- The Dressing of Granulating Wounds and Ulcers P D Strachan —p 397

Japanese Journal of Experimental Medicine, Tokyo

11 153 252 (June 20) 1933

- Method for Purification of Shiga Dysentery Bacillus Toxin and Antigenicity of the Anatoxin Derived from Purified Toxin S Hosoya S Terao and S Takata —p 153
- Influence of Fatty Acids on Growth of Tubercle Bacilli H Wakabayashi —p 171
- Physical and Chemical Properties of Bacteriophages K Muramatsu —p 209
- Hemo-Agglutination H Moriyama —p 217
- Sterilizing Action of Saturated Monobasic Fatty Acids on Putrefactive Bacteria Bacillus Typhosus and Vibrio Cholerae (Second Report) S Tetsumoto —p 247

Japanese Journal of Obstetrics and Gynecology, Kyoto

16 183 280 (June) 1933

- Influence of Roentgen Irradiation on Uropoietic System S Takita —p 184
- Study of Erepsin in Liquor Amni and Fetal Intestines in Every Stage of Pregnancy and in Meconium of the Human New Born M Abe —p 225
- Morphologic Study of Vaginal Cavity in Plaster Figures J Nakagawa and T Mukuda —p 231
- Icterus Gravis Familiaris of the New Born H Fujimori —p 234
- Quantity of Anterior Pituitary Lobe Hormone in Human Chorion and Decidua K Mizuno —p 238
- Mutual Relation Between Height and Weight of the Japanese New Born K Okada —p 242
- Experimental Study of Thyroid Function During Pregnancy Parturition and Puerperium Part I Metabolism of Iodine During Pregnancy and Puerperium V Quantity of Iodine in the Thyroid During Pregnancy and Puerperium U Nakamura —p 244
- Sexual Cycle and Thyroid Glands U Nakamura —p 246
- Hysterosalpingography K Nojima T Katahira and K Suga —p 249
- *Improvement on Hormone Diagnosis of Pregnancy of Zondek Aschheim and Shirai K Nojima and T Katahira —p 252
- Action of Plumbagin Effective Element of Plumbago Zeylanica D Cho —p 254
- Study of Icterus Neonatorum Part I Change of Blood Figure in the New Born's Jaundice Especially the Relation to the Rise and Fall of Quantity of Serum Bilirubin H Fujimori —p 258

Improved Zondek-Aschheim Pregnancy Test—Nojima and Katahira state that two or three injections of 5 cc of pregnancy urine per kilogram of body weight into the auricular vein of the rabbit will give a positive reaction in twenty-four hours. At times it was possible to detect a positive reaction in from twelve to fifteen hours after three injections and also a weak positive reaction was obtained in twenty-four hours after a single injection. Fresh hemorrhages in the ovarian follicles are considered to be a positive reaction. In the authors' twenty-three cases the hemorrhagic reaction was seen outside the follicles twenty-four hours later. This reaction appeared to be more intense in the mature animals. The reaction was especially accurate in its result in the early diagnosis of pregnancy and according to their experiment if pregnancy existed a positive reaction was obtained before the appearance of the next anticipated menstruation. When the urine of a pregnant woman was injected subcutaneously a strong positive reaction was shown forty-eight hours later by three injections of 4 cc of the urine. In the case of boiled urine the reaction was negative.

Presse Medicale, Paris

41 1417 1432 (Sept 13) 1933

- Clinical and Physiologic Considerations on Paramyoclonus Multiplex
G Guillaum and P Mollaret—p 1417
- Cicatricial Stenosis of Esophagus Due to Burns J Guisez—p 1420
- *Early Bilateralization in Artificial Pneumothorax C Garin Treppo
and Bouquin—p 1422

Early Bilateralization in Artificial Pneumothorax—Garin and his associates state that bilateralization occurring immediately or a few months after artificial pneumothorax and appearing to be part of the same attack is most frequently observed in the forms of tuberculosis characterized by more or less diffuse nodular lesions. The nodules, which have an average diameter of 1 mm, can be seen only on roentgenograms, they may appear isolated, disseminated over the whole lung, or in groups. Other lesions may also appear on the films, but the nodular lesions predominate. In nine out of ten early bilateralizations seen by the authors in 130 cases of artificial pneumothorax the primary lesion was of the nodular type. In all cases the extension assumed the same form as the primary lesion. Occasionally the early bilateralization is revealed by cough or unexplained fever but usually its clinical manifestations appear as a part of the as yet unimproved original pulmonary process, and the new lesion is diagnosed only by roentgenography. The authors do not think that artificial pneumothorax in strictly unilateral cases favors bilateralization, it is merely ineffective in preventing it. However, in cases not strictly unilateral, lesions of the bronchopneumonic type on the opposite side are given a sudden impetus by the pneumothorax. In nodular forms, therefore the unilaterality must be determined with the greatest care and granular lesions of the opposite hilus should be regarded with suspicion. Treatment of early bilateralization should consist at first of rest, maintenance of the pneumothorax under weak pressure and gold therapy (three injections of 0.15 Gm a week, up to 4 or 5 Gm). Only later, if the lesions become fixed or if a localized cavity develops, may bilateral pneumothorax be resorted to, as an exceptional therapeutic measure.

Policlinico, Rome

40 569 648 (Sept 1) 1933 Medical Section

- *Clinical and Roentgenologic Notes on Treatment of Gastroduodenal Ulcer with Sodium Benzoate A Pozzi and L Sforza—p 569
- Value of Encephalography in Diagnosis of Cerebral Tumor T Lucchini—p 596
- Constitutional Sporadic Hemolytic Icterus with Dyscranic Pluriglandular Syndrome Splenectomy E Jaccarelli—p 632

Treatment of Gastroduodenal Ulcer with Sodium Benzoate—Pozzi and Sforza treated twenty patients suffering from gastric and duodenal ulcer with daily intravenous injections of a solution of 0.5 Gm of sodium benzoate in 2 cc of water. During treatment the patients were deprived of meat, sugar, alcohol and tobacco. The injections were well tolerated by all patients. Gastric pain was often manifested after from four to five injections but gradually diminished. Epigastric pain is more easily and more rapidly influenced by the injections of sodium benzoate since it may definitely disappear after from twenty to twenty-five injections. On the other hand patients at that period of treatment still complain of acid eructations and heartburn on fasting as well as after eating. These patients showed a gain of from 2 to 3 Kg in weight in two months. There never was complete evidence of improvement in a patient until from forty to fifty injections had been given. Long continued cases required at least from sixty to seventy injections, others were prolonged to more than 100 injections. While this treatment proved only slightly efficacious in cases of ulcer complicated with pyloric stenosis or with other abdominal lesions (chronic appendicitis) the authors obtained their best results in cases of simple gastric and duodenal ulcer especially when the treatment continued beyond fifty injections. In gastric ulcer the clinical improvement seemed to be more rapid than in duodenal ulcer. The authors found that clinical improvement is not always accompanied by roentgenologic modifications in the majority of cases showing this improvement the niche was evident in the roentgenogram. In instances of prolonged treatment evidence of the niche may be difficult to find because of the edematous and spastic condition of the muscular layer of the mucosa. The niche may

appear after many doubtful roentgenograms, thus indicating that a negative roentgenogram does not justify the assumption of a cure. The author, therefore, maintains that great care must be exercised in the interpretation of roentgenograms.

Brasil-Medico, Rio de Janeiro

17 581 598 (Aug 19) 1933

- *Treatment of Cerebral Arteriosclerosis H Roxo—p 581
- *Folliculin Treatment in Prematurely Born Infants A Rocha—p 583
- Primary Nodal Diphtheria Thirty Cases D Moreira—p 584
- Acute Meningitis Case A J de Siqueira—p 586
- Surgical Treatment of Gastric Neoplasms N Burlamaqui Benchemol—p 588

Treatment of Cerebral Arteriosclerosis—Roxo classifies the patients into two groups: those who never have had epileptiform attacks and those who have had them. Sodium iodide is indicated in patients of the first group since it modifies the viscosity of the blood, lowers the arterial pressure and does not cause irritation of the cardiac muscle. Some authors prefer injectable preparations of sodium phosphate. The intravenous injection of a complex carbamide compound of trisulphonic acid (germannin) produces satisfactory results especially if followed by the administration of digitalis and of sodium citrate. Various other treatments, such as electricity (high frequency currents), hydrotherapy (in the form of carbogaseous baths) and hypotensive drugs are also indicated. Fly blisters, placed behind the ears, relieve the buzzing in the ears. In patients of the second group it is necessary to determine if there is cerebral hemorrhage or cerebral ischemia caused by embolus or thrombosis. The old practice of bleeding patients having cerebral hemorrhage complicating cerebral arteriosclerosis should be stopped. The application of an ice pack to the head and hot water bags to the legs, the injection of hydrastine or a liquid preparation of ergotamine tartrate and the administration of enemas with sodium sulphate of castor oil as well as of other drugs possessing the property of lowering the blood pressure, are indicated. Lumbar puncture is of great importance not only because it diminishes the cerebral congestion but also because of its diagnostic value. If there is cerebral ischemia the cerebral circulation should be stimulated by injections of caffeine or of camphor in oil. Acetylcholine also gives satisfactory results. Intravenous injections of a 10 per cent solution of germannin given at intervals of five days should start with 0.3 cc and the dose should be increased by 1 cc at each injection until 5 cc of the solution is given at one time. An alkaline alimentation, entirely deprived of meats and fish and rich in vegetables and fruits, completes the action of germannin causing an increase of the alkali reserve to normal figures. In cases of dementia complicating cerebral arteriosclerosis the treatment indicated for this clinical form of dementia should be resorted to.

Folliculin Treatment in Prematurely Born Infants—Rocha says that the concentration of follicular hormone increases during pregnancy, to reach its maximal figures during the days previous to delivery. After delivery it begins to go down and completely disappears during the first week of the puerperium. This seems to indicate that folliculin is of importance in the development of the fetus during the last day of its intra-uterine life and that the absence of the follicular hormones would result in great disturbances in the final development of the fetus. The author believes that this is the reason for the disturbances of prematurely born infants and for the good results of folliculin treatment in those infants. Schreiber treated eighty-five prematurely born infants with folliculin. In all the infants there was an increase in weight of 0.4 per cent at the end of eleven days as compared to a loss of 2.4 per cent in those not treated. The author directs attention to the importance of the increase in weight and of the prevention of loss of weight in those infants. Schreiber observed a group of ten pairs of twins. One twin in each pair received folliculin. Those who received folliculin showed an increase of 9.5 per cent of weight during eleven days while those who were not treated showed a decrease of 1.9 per cent. In another group of twins observed under the same conditions those treated with folliculin gained 38 per cent in thirty-five days, as compared with those who did not receive the treatment. In general the dose to be injected is 100 units of folliculin per kilogram of weight of the infant.

Archiv für klinische Chirurgie, Berlin

176 1 196 (Aug 24) 1933

- Conservative Treatment of Severe Fractures of Astragalus F Felsenreich—p 1
- Simple Method of Demonstrating Lymph Vessels by Parenchymatous Injection of Air E Fischer—p 17
- Anatomic Basis for Recurrence of Pain After Gastrojejunostomies for Gastroduodenal Ulcers H Puhl—p 38
- Status of Peptic Ulcer in Young and Its Treatment H Stocker—p 86
- Experimental Studies of Traumatic Shock R Herbst—p 98
- Modern Treatment of Uncomplicated Compression Fractures of Thoracic and Lumbar Vertebrae F Felsenreich—p 123
- Rectal Infusion of Hypertonic Solution of Sodium Chloride in Postoperative Period I I Genkin and R A Miljanskaja—p 156
- Sterilization of Solutions Especially of Those Intended for Injection Cutschmidt—p 166
- Röntgen Diagnosis of *Cytocercus* Infestation F Sorge—p 181
- Camphorated Oil Treatment of Hemorrhages from Lung in Gunshot Injuries of Thorax Y T Huang—p 187
- Esthetic Phrenicectomy R Finocchietto and O Vaccarezza—p 195

Recurrence of Pain After Gastrojejunostomy for Ulcer—Puhl obtained twenty-four specimens of the stomach, duodenum and jejunum removed at an operation secondary to the original gastrojejunostomy performed for gastroduodenal ulcer. The author describes the histories and the anatomic observations in seven patients. On gross examination, profound changes of the mucosa of the antrum were evident in the greatly thickened mucous folds. The microscopic picture is one of hyperplastic atrophic gastritis, which is rarely observed in gastric mucosa the seat of an ulcer not operated on. The gastritis is not the result of the primary ulcers, as these were found largely healed or at best to be the seat of a mild inflammatory reaction. The duodenum was the seat of a chronic duodenitis with localized areas of atrophy. The recurrent ulcerative gastritis and duodenitis presented ulcerations involving all the layers. Puhl believes that this picture constitutes the anastomotic basis for the recurrence of pain when the interval between the original operation and the secondary operation for recurrence amounts to one year or more. He found at the anastomotic ring of some of the cases a mucosa rich in folds, edematous and covered with thick mucus. There were signs of chronic and acute inflammatory changes transformation of the fundal glands into those of a pseudopyloric type cystic dilatation of the glands and superficial erosions. He also points out the existence of a chronic jejunitis with or without ulceration. The changes were present at the stoma and close to the ulcer and for some distance away from it. In a few instances the dependence of a jejunal ulcer on a stitch abscess could be demonstrated although the author feels that the latter perhaps played only a secondary part. The author concludes that the cause of pain in gastrojejunostomies is a typical form of gastroduodenitis. This frequently occurs with formation of new ulcerations in the presence of a healed original ulcer. Stenosis of the stoma can lead to a diffuse and even an ulcerative fundus gastritis. The causative factor in the production of the jejunal ulceration is the excessive and prolonged secretion of gastric juice. These observations lend support to the empirically gained impressions as to the advisability of wider resections both in primary and in secondary operations. Resections of the antrum and pylorus alone are not sufficient. Leaving behind of pyloric mucosa is as fallacious as the preservation of the lower third of fundal mucosa. The latter was found by Breckmann as well as by the author, in gastritis the result of sham feeding experiments to be the chief source of production of hydrochloric acid because of the abundance of chief cells. Extensive resections of the type advocated by the author should be resorted to only after several courses of careful persistent internal treatment have been carried out. Roentgen diagnosis of a severe gastroduodenitis after the operation calls for an early reoperation because the deeper jejunal lesions display little tendency to healing. He emphasizes the necessity for careful medical treatment after the original operation and a diet that spares the motor and chemical functions of the stomach.

Rectal Infusion of Sodium Chloride in Postoperative Period—Genkin and Miljanskaja since 1931 have substituted in the postoperative treatment of cases of ileus a 5 per cent solution of sodium chloride for the usual physiologic solution

in the drop method of rectal infusion. Since 1932 they have adopted in some cases a modification of the method of Gosset and Soupault, consisting in slowly injecting into the rectum 100 cc of a 15 per cent solution of sodium chloride. As a result of their own clinical experience, they state that both the 5 per cent and the 15 per cent solutions of sodium chloride proved to be an effective means of combating the motor disturbances of the bowel function in the postoperative period. The infusion of the 15 per cent solution is indicated when other measures such as application of warmth to the abdomen and the rectal tube failed to accomplish the desired result. The 15 per cent sodium chloride enema can serve as a dependable differential diagnostic method in functional and mechanical intestinal obstruction. The authors feel that the safety and ease of application of the method suggest that it replace the intravenous method of introducing solutions of hypertonic salt. The infusion of the 5 per cent solution appears to be particularly useful as a postoperative measure for patients operated on for intestinal obstruction because it leads to early evacuation of the bowel and saturation of the organism with chlorides. The 15 per cent sodium chloride enema is likewise applicable in various forms of motor insufficiency of the intestine in patients with chronic inflammatory processes of the peritoneal cavity, in pseudo-ileus of renal origin and in coprostasis.

Beiträge zur Klinik der Tuberkulose, Berlin

83 121 240 (July 29) 1933

- *Tuberculous Addison's Disease Tuberculosis of Suprarenals in Course of Tuberculous Infection O Gsell and F Uehlinger—p 121
- Combination of Pneumothorax with Phrenic Exeresis in Theory and Practice A Behrmann—p 158
- Dry Pneumothorax Apparatus B Duboczky—p 173
- Phrenic Exeresis of Left Side with Typical Displacement of Gastrointestinal Tract Iuse Rickers—p 175
- Method of Cultural Demonstration of Tubercle Bacilli in Blood O Kirchner—p 183
- Cultural Demonstration of Tubercle Bacillemia in Experimental Rabbit Tuberculosis C K Choun—p 190
- Experimental and Clinical Investigations on Monocytic and Lymphocytic Index in Tuberculosis and in Application of Supravital Blood Staining Method J Zeyland—p 199
- Gas Embolism in Brain After Artificial Pneumothorax also Contribution to Prophylaxis of Gas Embolism V Kairinkschis—p 211
- Utilization of Carbohydrates for Growth of Tubercle Bacilli L M Model—p 214
- Acid Fast Bacilli Causing Green Coloration of Sauton Culture Medium J Schubert—p 220
- Pregnancy Acute Articular Inflammation Tubercle Bacilli in Blood of Umbilical Cord Contribution to Congenital Tuberculosis C Reitter and E Löwenstein—p 225
- Tubercle Bacilli Causing Green Coloration of Sauton Culture Medium H Lenhartz—p 237

Tuberculosis of Suprarenals—Gsell and Uehlinger attempt to classify Addison's disease with the hematogenous forms of tuberculosis. They observed thirty-five cases of bilateral total tuberculosis of the suprarenals and thirty-seven cases of unilateral or bilateral incomplete tuberculosis of the suprarenals. They state that 1 The infection of the suprarenals is hematogenous because with the exception of the extremely rare placental infections that end fatally during the nursing age, the infection was always secondary, originating in a primary complex or in a postprimary tuberculous focus. 2 In all cases of tuberculous Addison's disease there were besides the bilateral, caseous fibrous suprarenal tuberculosis, also extrasuprarenal hematogenous foci of dissemination regularly in the pulmonary pleura, in the urogenital system in every third case and in the skeletal system in every fourth case. Remnants of past exudative tuberculous inflammation of serous membranes were found in every third case. In about one third of the cases the bilateral tuberculosis of the suprarenals was the only active tuberculous focus. The pulmonary tuberculous changes show the characteristic signs of hematogenous dissemination. There are as a rule only slight bilateral apical disseminations. 3 Transition to miliary tuberculosis is extremely rare. 4 The average duration of tuberculous Addison's disease is from six months to two years but this period is only the last stage of the disease, that of complete destruction of the suprarenals and of glandular insufficiency. The time required for the development has not been definitely determined as yet. The tuberculous infection of the suprarenals begins during the period of puberty or during postpuberty.

The long period of development up to the complete destruction of the organs explains the relatively late manifestation of Addison's disease in many patients between the third and the fifth decade of life. 5 With the exception of suprarenal tuberculosis acquired by way of the placenta, tuberculous Addison's disease is practically unknown during childhood. The youngest patient mentioned in the literature was 9½ years old. The disease becomes somewhat more frequent after the twelfth year has been reached, but even at this age it is still comparatively rare, and it is also rare in aged persons. 6 It is three times more frequent in men than in women. 7 The development of suprarenal tuberculosis is intermittent. Of the various types of tuberculosis of the suprarenals, the bilateral fibrous caseous form that leads to Addison's disease lasts longest. Miliary tuberculosis of the suprarenals develops within a few weeks. The large nodular suprarenal tuberculosis, which appears in the form of unilateral or bilateral conglomerate tubercles in hematogenous generalization of tuberculosis, develops in from one to five years. The development of bilateral, chronic fibrous-caseous suprarenal tuberculosis lasts many years or even decades. The period of glandular insufficiency also varies in length. It is short in generalized tuberculosis and it may be of varying duration in other forms, while it may last several months or years in classic Addison's disease. 8 Investigations as to the number of hematogenous disseminations revealed that in the majority of cases of tuberculous Addison's disease there was only a single dissemination. This proves the benign character of the tuberculous process or the defense power of the organism, and the authors think that death is due to the fact that there is no glandular tissue to replace the suprarenals rather than the result of the tuberculous suprarenal processes as such.

Deutsche medizinische Wochenschrift, Leipzig

59 1347 1380 (Sept. 1) 1933

- *New Method for Estimating Function of Heart. E. Atzler—p. 1347
- Investigations on Pathology of Coronary Artery. G. W. Parade—p. 1350
- *Hiatus Hernias and Angina Pectoris. Mosler and Haas—p. 1353
- Psychically Abnormal Children and Young Persons. K. Schneider—p. 1354
- Characterization of Sources of Ultraviolet Rays by Erythema. E. O. Seitz—p. 1358
- Fundamental Attitude of Physician. V. von Weizsäcker—p. 1360
- Therapy of Hemorrhoids and of Pruritus Ani. A. Maueuer—p. 1363
- New Air Tight Covers for Containers. E. Bufe—p. 1363
- Governmental Postal Life Insurance in Japan. H. E. Schuchardt—p. 1365

Method for Estimating Function of Heart—The method devised by Atzler permits the registration of the fluctuations in the form and size of the heart. The principle of the method is that the human heart is brought between the plates of a condenser and that the changes in size produced by the heart beat are registered. The capacity of the plate condenser is proportional to the dielectric constants of the medium and of the surface and inversely proportional to the distance between the plates. If a body with a different dielectric constant is brought into the dielectric, the capacity changes proportionally to the difference of the two dielectric constants of the surface and the thickness of this body. In this method it is of primary importance that the capacity changes in proportion to the volume of the body that is brought into the condenser field. Two condensers that have the approximate size of the heart are placed in the front and back so that they do not touch the person. The two plates are connected by a curved piece of metal and thus have an oscillation circuit consisting of a capacity and of a relatively smaller automatic induction. The wavelength for which the oscillation circuit is synchronized is primarily determined by the capacity of the condenser. The size of the condenser is given by the measurements of the human subject and the automatic induction is as small as possible. On the basis of Thomson's formula for the duration of oscillation, the wavelength is from 2 to 3 meters. A small transmitter that emits such a wavelength is connected with the oscillation circuit by induction. The better the circuit is synchronized with the transmitter the stronger it oscillates. However, the synchronization is independent of the volume fluctuations of the heart. If the conditions are arranged so that the work is done in the straight linear portion of the

synchronization characteristic, the synchronization is proportional to the volume fluctuations. The high frequency alternating current of the oscillation circuit is rectified by a trielectrode tube, the grid and anode of which are short circuited and is amplified by an additional tube. The amplified current is registered by a string galvanometer or by an oscillograph. The author reproduces typical dielectrograms that were obtained by this registration on normal hearts as well as abnormal hearts, and he explains the significance of the various deflections in the curve.

Hiatus Hernias and Angina Pectoris—Mosler and Haas investigated the frequency of hiatus hernias and their relation to angina pectoris. The form that in Åkerlund's classification is referred to as the third form was observed comparatively often as it was seen forty-nine times in examinations of the stomach on 1,500 subjects. In this form of hiatus hernia the esophagus has a normal length and is within the hernial sac, and the cardiac portion of the stomach has entered the thorax through the diaphragmatic opening. The authors were able to corroborate the observation that this form occurs primarily in older persons, only two of the forty-nine being less than 50 years old. According to von Bergmann (abstract in THE JOURNAL, July 2, 1932, p. 89), it is difficult to differentiate between the epiphrenal syndrome and angina pectoris. The authors, however, considered primarily patients with true angina pectoris and those with severe angina pectoris like attacks and disregarded those with disturbances of a mild nature. Of the forty-nine patients with hiatus hernia, twenty (40 per cent) had angina pectoris or disturbances resembling angina pectoris. In the patients with large and medium hiatus hernias the incidence of angina pectoris was 55 per cent, while in those with small hiatus hernias the incidence was only 31 per cent. The authors report that of thirty patients with angina pectoris ten had no hiatus hernia. They think that hiatus hernias are a frequent occurrence in aged persons.

Medizinische Klinik, Berlin

29 1231 1262 (Sept. 8) 1933

- How Do Vitamins Act? Attempt of a Unified Demonstration. W. Kollath—p. 1231
- *Clinical Value of Tolerance Tests for Diagnosis of Glaucoma. R. Stein—p. 1235
- *Clinical Aspects Particularly Hematology of Influenza Developing During this Year. G. Arndt—p. 1238
- Motor Innervation of Human Gallbladder. G. Kopstein and H. L. Popper—p. 1242
- Severe Hematuria with Aspects of Renal Colic in Diabetic Coma. A. Boger and H. Wendt—p. 1243
- New Reliable Micromethod for Determination of Sedimentation Speed of Erythrocytes According to Raskin. A. Rad—p. 1244
- Case of Secondary Lipoid Nephrosis. A. Weissmann—p. 1245
- Therapy and Pathogenesis of Sciatica. J. Wilder—p. 1247
- Parasitism in Zoology (Parasite Disease Epidemic). E. Martini—p. 1248

Tolerance Tests in Diagnosis of Glaucoma—Stein points out that the functional disturbances in the intraocular vascular apparatus play an important part in the pathogenesis of glaucoma. Whereas the normal eye has the capacity to retain an equilibrium of pressure in spite of fluctuation in the general circulation, the glaucomatous eye or the eye that is predisposed to glaucoma has lost this capacity and reacts to changes of pressure in its vascular system with an increase in its internal pressure. This changed reaction is frequently already present at a time when the clinical symptoms of glaucoma are not yet clear. Thus there is a possibility of securing an early diagnosis of glaucoma by tolerance tests. The modification of the intra-ocular vascular apparatus in order to obtain a diagnostically valuable fluctuation in pressure can be produced by various methods. The author first describes and evaluates the test in which the injection of caffeine or drinking of strong coffee is used to obtain a noticeable increase of the intraocular pressure. Then he discusses the inhalation of amyl nitrite. This test may be modified by decreasing the number of drops to be inhaled from five to three and he shows that the diagnostic value of the test increases with this decreased dosage. Whereas the aforementioned tests are based only on the dilatation of the vessels of the head there are other tests which in addition to the increased inflow of blood also involve stasis. The latter can be produced by positional changes, particularly by lowering of the head or by constricting bandages.

The author mentions a water test, the fluorescein test and the modification of the intra-ocular pressure by massage. He discusses Seidel's test (exclusion from light and exposure to light) and the influence of miotics and of mydriatics. He points out that the intra-ocular pressure does not remain constant but changes in the course of the day. In glaucomatous eyes these fluctuations are much greater than in the normal eye, and abnormally high fluctuations should therefore draw attention to the possibility of a glaucoma. Since none of the tests can be considered absolutely reliable, it is advisable always to employ several of them. After a successful operation the formerly positive reactions become negative, and thus the tests can be employed for the estimation of the results. Moreover the tolerance tests indicate that the patient suffering from glaucoma should avoid everything that increases the dilatation of the vessels of the head, such as strong coffee, working in a bent position, wearing tight collars, resting in the horizontal position and living in overheated or insufficiently ventilated rooms.

Clinical Aspects of Influenza—Arndt observed during the last influenza epidemic, that the first cases, which concerned mostly undernourished vagrants, appeared during intensely cold weather with high winds but without snowfall. Although the course of the disease was mild, it spread rapidly. In the workers' camp, approximately 80 per cent of the inmates, and in the author's clinic 90 per cent of the physicians and attendants contracted influenza. The incidence of pneumonia was 17.2 per cent in the ninety-two patients treated by the author. Compared with former epidemics, the involvement of the circulatory apparatus was only slight during this epidemic. Meningitic symptoms and epidemic (lethargic) encephalitis which in former epidemics had shown a comparatively high incidence, were entirely absent, as was likewise hemorrhagic polioencephalitis. Polyneuritis developed in one of the patients. The incidence of renal complications was comparatively high. Quinine proved to be the most effective defervescient. In the beginning the author compared the blood pictures of the different patients and reached the same contradictory results reported in the literature. He decided to follow Schilling's suggestion and consider the hemogram only in connection with the clinical observations. In uncomplicated cases of influenza, he observed on the first and second day and occasionally on the third day a slight leukocytosis with an increase in neutrophils and a decrease in lymphocytes. During the following days the leukocytosis was changed to leukopenia which, however, rarely went below the 4000 mark. During this transition there is a reduction of the initially increased neutrophils and an increase in the formerly reduced lymphocytes. The leukopenia persists until defervescence sets in. The monocytes show a considerable increase shortly before defervescence. This corresponds to the "phase of combat and victory," as Schilling expresses it. The leukopenic hemogram is the result of the inhibiting action of the influenza toxin on the leukopoietic function. After the influenza infection has been overcome the number of leukocytes increases again in that many immature neutrophils appear in the blood and at the same time eosinophils appear as the first signs of recovery. The red hemogram is characterized by an increase in the erythrocytes. The sedimentation speed is generally subnormal. However, the hemogram described before is only one of many different ones that may occur. The author found that the diverse symptomatology of influenza is reflected in the hemogram. But he points out that even if the interpretation of the hemogram of influenza is not as simple as in infectious diseases of a more typical course its careful study in connection with the clinical observations will nevertheless be a valuable aid.

Münchener medizinische Wochenschrift, Munich

SO 1347:1384 (Sept 1) 1933

- Functional Test of Respiration in Collapse Therapy. A Heymer—p. 1347.
Treatment of Fractures of Wrist. W. Küchel—p. 1350.
Necrotic and Possibility of Further Clarification of Dorsal Bacteremic Observations. E. Eckstein—p. 1352.
Traumatic Luxation of Toe in Football Playing. L. Deppe—p. 1353.
Richter's Glasses. A. Krecke—p. 1354.
Hysterian and Tragedy of Life. W. Scholgen—p. 1355.
A Series of Several Rare Abdominal Tumors with Fetal Characteristics. W. Senn and A. L. L. —p. 1356.

- Treatment of Poliomyelitis with Convalescent Serum. H. Dennig and Hellr. Hoefler—p. 1367.
Alcaligenes Abortus Infection with Abortion in Woman. Cure by Vaccine. Schwartz—p. 1368.
Inadvisability of Massage and of Passive Movements in New Injuries of Bones and Joints. L. Bohler—p. 1369.

Functional Test of Respiration in Collapse Therapy—Heymer gives the technic of the determination of the apneic pause as follows. The patient is requested to take several deep breaths. After the fifth one a blood specimen is withdrawn from the femoral artery. Several minutes later the patient is asked again to take five deep breaths and after that to suppress respiration. Toward the end of this respiratory pause the length of which is determined by means of a stop watch another specimen of blood is withdrawn from the femoral artery. Then the two blood specimens are tested for their carbon dioxide and their oxygen content. The tests show that the carbon dioxide values increase during the respiratory pause. If the respiratory function is good respiration can be suppressed for a comparatively long time, but if it is impaired the apneic pause is shortened, and the conclusion was drawn that the determination of the respiratory pause is an indicator for the respiratory function. The pause is reduced in all pulmonary disturbances, particularly in tuberculosis. In extensive pulmonary collapse, the respiratory pause is reduced just as is the vital capacity. If there is no reduction in the respiratory pause or if the decrease is slight the respiratory function can be considered good. The technic of the respiratory test is simple, for it requires no apparatus or instruments. The author admits that it cannot replace the other functional tests of the respiration, but he thinks that it is a valuable addition. In some instances particularly when the respiratory movements are impaired by pleural pains, it may be superior to the determination of the vital capacity. A disadvantage of the method is that a single test does not permit definite conclusions for only those values are reliable that are obtained after several preliminary tests. Moreover, the test requires the willing cooperation of the patient.

Treatment of Fractures of Wrist—Küchel considers the fact that in the roentgenologic department of his clinic sixty carpal fractures were detected in three years ample proof that they are not as rare as may be assumed. Examination of thirty-three of these wrist fractures disclosed that mobilizing treatment does not bring the desired results. Rest, moist applications and cooling of the broken wrist cannot be considered adequate treatment. It is also inadvisable to begin with massage and hot air treatments after a short period of resting the part and after short freedom from pain. The injured person should not be permitted to work without suitable splinting. The author demands complete immobilization of the wrist joint by means of plaster-of-paris splints and control of the curative process by means of roentgenoscopy. He thinks that immobilization is done best by means of the dorsal plaster-of-paris splint, fastened by a gauze bandage, by a starched bandage or by a plaster-of-paris bandage. The splint should reach from the metacarpophalangeal joints almost to the elbow joint and it should be applied in slight dorsal flexion and ulnar abduction. If the wrist joint is completely immobilized by a plaster-of-paris cast the use of the hand and of the arm is desirable. Of particular interest are the fractures of the navicular and the semilunar bones and the concurrence of the fracture of a carpal bone with a perilunar luxation. These fractures necessitate an especially long immobilization generally from five to six weeks. If at this time roentgenoscopy reveals that the bone has not yet healed the plaster-of-paris cast should be continued. Uncomplicated fractures of the other carpal bones require immobilization for about three weeks.

Human Alcaligenes Abortus Infection with Abortion—Schwartz relates the history of a woman aged 25 who since the end of December felt weak and had intermittent fever. At the beginning of January she had an abortion the pregnancy being in the eighth or tenth week. The anamnesis revealed that until two and a half months before this she had been employed on a large farm where abortion was frequent among the cattle. The patient admitted that she had the habit of drinking raw milk. The diagnosis of *Alcaligenes abortus* infection was based on the clinical picture and on the high

agglutination titer (1:1,600). The hemogram revealed leukopenia and a considerable lymphocytosis. Most symptoms were those that are usually observed in *Alcaligenes abortus* infection, but abortion except for a case reported by Frei in which the uterine secretion of a woman who had aborted four times contained *Alcaligenes abortus* has not yet been described in human subjects. The author thinks that the comparative rarity of *Alcaligenes abortus* infections in human beings and the fact that it is more frequent in men than in women and that in women it concurs only rarely with pregnancy explain the rarity of human abortions caused by *Alcaligenes abortus* infections. Another noteworthy aspect of this case was that it responded favorably to vaccine therapy.

Wiener klinische Wochenschrift, Vienna

46 1065 1088 (Sept. 1) 1933

- Spontaneous Pneumothorax. H. Krasso—p. 1065
 *Vaso Allergy or Vasoneuropathy as Cause of Urticaria Elicited by Cold, Heat or Pressure? C. G. E. Urbach and P. Fasal—p. 1069
 *E. Freund's Cutaneous Reaction for Diagnosis of Cancer. J. Cholewa and S. Černelc—p. 1072
 Tonus of Diaphragm and Disturbance of Sleep. A. Feldner—p. 1076
 Differential Diagnosis and Therapy of Anemias. A. Herz—p. 1077
 Chorea Minor. J. K. Friedjung—p. 1079
 Treatment of Spontaneous Abortion. P. Werner—p. 1081

Urticaria Elicited by Heat, Cold or Pressure—Urbach and Fasal reach the conclusion that the question whether urticaria elicited by cold, heat or pressure is caused by a vaso-allergy or a vasoneuropathy cannot be answered in general but has to be decided in each individual case on the basis of clinical and of experimental investigations. The majority of cases in the authors' material were not of specific allergic origin. The term physical allergy for cases of this nature is rejected by them and they suggest the term vasoneuropathy of physical origin. The therapy should aim at finding and removing the predisposing factors that have led to the pathologic reaction of the vessels and to the sensitization. Then attempts should be made to increase the tolerance for the physical factor to which the patient is hypersusceptible. Whether the realization of the desensitization may be considered a specific phenomenon of allergic immunity or a nonspecific hypodermic cannot yet be determined although the latter theory has the most in its favor. The authors advise a nonspecific therapy of the vessels by means of a synephrin preparation, synthetic ephedrine or calcium.

Freund's Cutaneous Reaction for Cancer—Cholewa and Černelc performed the cutaneous cancer test perfected by Ernst Freund and Kammer on fifteen patients with tumors and on twenty-seven control persons. The crystallized "carcinoma-fatty acid" extracted from the intestinal contents is introduced intracutaneously. The injection never impaired the general condition and did not even produce a disturbing local infiltration. The appearance of a hard and sharply defined nodule (about the size of a lentil) was considered a positive reaction. All the patients with tumors (carcinomas) gave a positive reaction even those with cutaneous cancers without glandular metastases. Of the twenty-seven controls two gave a positive reaction. One of them had diabetes that is, an abnormal metabolism, and the other one was marantic and may have a carcinoma that has not been detected as yet. The authors emphasize that even patients with severe injuries of the liver gave negative reactions. They deplore that they were unable to perform the cytolytic test at the same time.

46 1089 1112 (Sept. 8) 1933

- Clinical Aspects of Epidermophytosis. A. Matras—p. 1089
 *Problems of Adhesive Pericarditis. M. Schur—p. 1091
 *Cesarean Section in Small Rural Hospitals. H. Ludwig—p. 1097
 Vaso Allergy or Vasoneurosis as Cause of Urticaria Elicited by Cold, Heat or Pressure? E. Urbach and P. Fasal. C. G. E.—p. 1100
 *Silver Nitrate Reaction and Its Applicability in Diagnosis of Diseases of Liver. Pathology of Sodium Chloride Metabolism. L. Rósa—p. 1104
 Diagnosis and Therapy of Diphtheria. J. Siegl—p. 1105
 Welfare Work for Tuberculous Children. A. Gotzl—p. 1107
 Abortive Treatment of Influenza. F. Schnapek—p. 1107

Adhesive Pericarditis—Schur summarizes his conception of the pathologic process in adhesive pericarditis as follows. The discharge of the venous blood from the liver, which under normal conditions is subject to a complicated regulation is considerably disturbed. The disturbance is in many cases a

mechanical one but in the majority of cases also a functional one. It consists in the deficient capacity for dilatation of the valve of the inferior vena cava. This factor is the basis for the characteristic stasis, but other factors, particularly the mechanical constriction of the hepatic veins, intensify it. Mechanical and functional inhibitions become manifest especially during inspiration. The discharge from the inferior vena cava is often subject to mechanical disturbances, but the functional disturbance is much less frequent. The superior vena cava likewise may be mechanically or functionally inhibited. Thus the heart is inadequately filled and the beat volume decreases. An increase is made impossible by extracardiac influences since the diastolic dilatation and the progressive dilatation are limited by the adhesions. Moreover, even the reduced quantity of blood cannot be taken care of in the long run because of the disturbed systole, owing to the fact that the masses of adhesions do not permit a normal contraction and that the heart is fixed to the diaphragm and is pulled by it. Hypertrophy is made difficult by deficient nutrition. The decompensation at first only intensifies the hepatoportal stasis, but later it leads to generalized stasis. The author discusses the factors in the development of hydrothorax. It may develop following insufficiency of the right heart and after mechanical and functional inhibitions of the vena cava superior, of the vena cava inferior, and of the vena hemiazygos. The author shows that most of the disturbances are independent from the presence of anterior adhesions and that clinical classifications into internal and external forms are superfluous. He criticizes and rectifies the diagnostic schematization of the size of the heart, rhythm and cardiac sounds and also the significance of Wenckebach's pulse particularly for atypical cases. He calls attention to the slight pulmonary stasis frequently revealed in the roentgenograph and stresses the diagnostic and therapeutic value of electrocardiography. For the treatment of severe myocardial lesions he recommends surgical treatment in several stages and immediate interruption at the first signs of severe disturbances of the heart action. He advises that adhesions with the diaphragm should be removed first, then the cava should be inspected and finally the left ventricle should be freed.

Cesarean Section in Rural Hospitals—Ludwig reports his experiences with cesarean operations by means of an epigastric incision. He emphasizes that this technic is simple and can be used with one assistant. It requires the smallest incision, it can be completed in a short time, and it reduces the operative shock. It is indicated for the sake of the mother in severe hemorrhages, eclampsia, cardiac disorders, tuberculosis, rupture of the uterus and carcinoma, and for the sake of the child in intra-uterine asphyxia and in prolapse of the umbilical cord. The epigastric incision permits all secondary operations. The delivery of the child is easy and tearing of the uterine wound does not have to be feared. The operation is not restricted to a certain phase of labor and it can be done on the uterus not undergoing contractions. The author performed it between the twenty-eighth and fortieth weeks of pregnancy. The puerperium is uneventful and adhesions of the puerperal uterus with the abdominal scar are prevented. The danger of cicatricial hernias, in the hard-working women of the rural districts, is much less in case of the small epigastric incision than in the hypogastric scars. The author thinks that, in small rural hospitals, epigastric cesarean section should be done in preference to hypogastric section.

Silver Nitrate Reaction in Diagnosis of Diseases of Liver—Rosa describes the technic of the silver nitrate reaction in the urine. Into five test tubes he puts 1, 2, 15, 2 and 5 cc of urine to which he adds 0.2, 0.2, 0.1, 0.1 and 0.1 cc of a 10 per cent solution of silver nitrate and then shakes the mixtures. The dilutions thus obtained are 1:5, 1:10, 1:15, 1:20 and 1:50. Under frequent shaking the mixtures are then boiled for from thirty to forty seconds over a strong Bunsen flame preferably in a water bath. Then the test tubes are set up for a few seconds until the precipitate has accumulated at the bottom. In case of a negative reaction the sediment is snow white and above it there is a transparent, yellowish fluid but if the reaction is positive the precipitate is lilac, brown or black and above it there is a fluid of the same color. According to the severity of the pathologic process the reaction is positive from the first to the fifth tube and in the severest

cases even a 1:100 dilution gives a positive reaction. The author obtained a positive reaction in all cases in which the function of the liver and the sodium chloride exchange were disturbed. Since the disturbances in which the reaction was positive were either liver diseases or processes in which involvement of the liver can be assumed such as uremia, pernicious anemia and syphilis, the author thinks that on the basis of his 2,000 tests he is justified in concluding that the liver plays a part in the sodium chloride exchange. He also deduces from his observations that the lower limit of the normal chloride concentration is 0.72 Gm per hundred cubic centimeters and that the positive reaction of the silver nitrate test indicates an abnormally low chloride concentration of the urine as the result of a serious functional disturbance of the liver. He emphasizes that the silver nitrate reaction is a rapid and simple method and that, whenever it indicates a chloride concentration of the urine of less than 0.72 Gm per hundred cubic centimeters, an impairment of the liver exists.

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- Heat Regulation by Lungs H. Berg—p. 1
Is Intravenous Pyelography a Functional Test of Internal Renal Diseases? J. Olivet—p. 9
Enlargement of Liver in Infectious Diseases E. Kobrak—p. 15
Histamine for Functional Test of Lung O. Klein and W. Nonnenbruch—p. 29
Mode of Action of Cinchophen on Purine Metabolism W. Griesbach and B. C. Costopanagiotis—p. 42
Observations on Patients with Diabetes Mellitus in Years from 1927 to 1931 G. Henkel—p. 52
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Is Intravenous Pyelography a Functional Test of Kidney?—In summing up the results of his studies on intravenous pyelography, Olivet points out that the absence of a clear contrast in the elimination pyelogram does not necessarily indicate a diseased kidney, for extrarenal causes may retard the elimination so that the renal pelvis does not show in contrast. He states that it is erroneous to consider an extraordinarily clear elimination pyelogram a sure sign of a normal kidney for in contracted kidney and in many cases of chronic glomerular nephritis the elimination pyelogram may still be good at a time when there are already clinical signs indicating renal impairment. The author reaches the conclusion that intravenous pyelography and the determination of the specific gravity of the urine after the injection present a valuable supplement to the formerly employed functional tests, if used together with these elimination pyelography is valuable, but employed alone it is not a reliable basis for the diagnosis.

Histamine for Functional Test of Lung—Klein and Nonnenbruch show that by the subcutaneous injection of 1 mg. of histamine the functional capacity of the lung, namely, the oxygen diffusion, can be determined. They use the following method. While the person is completely quiet blood is withdrawn from the radial or brachial artery the histamine is injected and twenty minutes later another blood specimen is withdrawn by arterial puncture finally about forty minutes after the injection a third specimen is taken. It is sufficient to withdraw 3 cc. of blood for each analysis. Care must be taken that the blood does not come in contact with the air. The specimens are tested for their oxygen deficit, oxygen capacity, percental saturation and absolute oxygen content. In healthy persons histamine injection is followed by only a slight increase in the oxygen deficit of the arterial blood usually not exceeding from 0.5 to 0.8 per cent by volume. A reduction of the percental oxygen saturation and of the absolute oxygen content in the arterial blood is almost never observed in these

cases. However, if the functional capacity of the lung is impaired (in pulmonary diseases and in disturbances of the pulmonary circulation), the increase in the oxygen deficit is nearly always in excess of 1 per cent by volume, usually from 3 to 4 per cent, and occasionally as much as 5 per cent. Moreover, these cases generally show a considerable reduction in the percental oxygen saturation, which from the normal value of over 92 per cent may decrease to 80 and even 70 per cent, and the absolute oxygen content likewise decreases. The oxygen capacity of the arterial blood, which under the influence of the action of histamine generally shows a considerable increase, does not influence the oxygen content and the percental oxygen saturation. The oxygen capacity, the erythrocytes and the hemoglobin increase in the arterial blood under the action of histamine in the majority of cases. In certain pathologic conditions (edema, impairment of the liver), the oxygen capacity does not increase, or becomes reduced. The authors emphasize that the histamine test as employed by them makes manifest latent disturbances of the pulmonary function in diseases of the lung (pneumothorax) and in disturbances of the pulmonary circulation in that under the influence of histamine a formerly normal oxygen saturation of the arterial blood turns into a noticeable deficit of oxygen saturation.

New Hemophilic Family Tree—Fonio gives the history of a hemophilic family in which the disease has been hereditary for only two generations. How the hemophilic heredity entered this family could not be definitely determined. The author considers it possible that the mother of the grandfather may have brought it into the family for she was of illegitimate birth and may have been related to a hemophilic family. Another possibility is the new development of the hemophilic hereditary factor perhaps as the result of considerable inbreeding. The author reports his studies on the blood, particularly its coagulation, of the last generation and on two women who had carried the disease. In the two women he discovered a slightly prolonged coagulation time, a normal or increased number of platelets and a relative lymphocytosis but whether these are signs of a latent hemophilic heredity cannot be determined as yet.

Atypical Course of Myocardial Infarct—Hochrein and Seggel, in studying the clinical histories of seventy patients with myocardial infarct discovered that the classic symptomatology with stenocardial complaints or circulatory collapse is to be detected only in some patients. In other cases, of which twelve were controlled by a necropsy, the anginal pain had been absent, and in many others also the circulatory collapse. This atypical course of myocardial infarct is found in patients who have suffered from circulatory insufficiency for a longer period. In these patients the development of the myocardial infarct becomes manifest in a suddenly developing dyspnea, in exacerbation of the cardiac insufficiency and in similar symptoms. Diabetic patients represent another group. In these patients, coronary occlusion occurs as a rule without stenocardia while collapse manifestations are comparatively frequent. Since, however, the other symptoms of myocardial infarct such as increased temperature, leukocytosis and circulatory disturbances, are found in the atypical course the authors designate the form occurring in circulatory insufficiency and in diabetes as the clinically rudimentary form of the myocardial infarct. They give a short discussion of the mechanism of this rudimentary form. They point out that the diagnosis of the atypical form of myocardial infarct is generally more difficult than is the case with the classic course; however, the great motor unrest characteristic for all patients with myocardial infarct and also the unusually low blood pressure and the high pulse rate should make the observer think of myocardial infarct. Electrocardiographic examination is necessary for the exact demonstration. The present status of electrocardiography not only aids in the diagnosis of myocardial infarct but also permits the localization of the myocardial lesion and indicates its duration. The differentiation of the incipient and of the late stage is important not only for the diagnosis but also for the treatment for in acute myocardial infarct precaution has to be used in digitalis therapy on account of the danger of acute heart failure from ventricular fibrillation. Even if myocardial infarct is followed by a mild cardiac insufficiency (congestion bronchitis

liver stasis), digitalization should be postponed as long as there are an elevation of temperature and leukocytosis, and as long as the electrocardiogram shows signs of the initial stage

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Ascarids in Biliary Tract—Gasinski reports a case of ascarids in the biliary tract in a woman, aged 28, who five weeks before the delivery of her third child had localized pains under the lower right ribs. The pains radiated toward the back, about the right scapula, and presented a paroxysm occurring every day. There was no vomiting at the onset of the illness. The temperature was always 102.2 F and accompanied by chills. Ten years previously she had typhoid. Examination showed that the skin of the abdomen was flabby and nearly always painful on pressure, the liver was enlarged reaching from two to three fingerbreadths below the arch of the ribs, and the gallbladder was slightly distended. The specific gravity of the urine was 1025 and it contained albumin and some white cells stained with bile. The blood showed hemoglobin 70, red cells 4,430,000, white cells 10,000, lymphocytes 76 per cent, monocytes 22 per cent and an absence of eosinophils and basophils. Further examinations, every two or three days, showed an increase in the white cells (14,000, 15,600 and 16,900). During this time the temperature remained at 102.2 F and the pulse was 120, and during the last few days the patient vomited bile. The author concluded that the gallbladder was inflamed and decided to operate. He found the liver enlarged and studded with small disseminated and soft yellow growths the size of a grain or a bean. The gallbladder was empty and small. Its walls were smooth, thin and shiny. The author aspirated a few cubic centimeters of turbid bile from the biliary canal, in which he found on incision seventy eight live ascarids. A drain was left in the biliary canal and brought out at the upper end of the abdominal incision. During the first and second week ascarids were discharged through the drain and the temperature dropped, but the patient acquired pneumonia and died toward the end of the third week. Necropsy confirmed the operative observations.

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Tonus of Striated Muscle After Sympathectomy in Spastic Paralysis—Kasumov and other workers performed sympathectomies in dogs in order to study the tonotropic effect of the sympathetic nervous system on the function of skeletal muscles. In four dogs they resected the sympathetic trunk and sectioned the communicating branches on the left side of the abdomen from the diaphragm down to the promontory. Twenty-five days later they exposed the lumbar portion of the vertebral column and sectioned the anterior motor roots from the fourth to the seventh lumbar and the first and second sacral nerves on both sides. The observations were continued for several months. The muscle tone was studied kymographically. Before the development of contractures in the course of four or five months, the sympathectomized extremity was found to be weaker than the control extremity. Contractures developed from three to five weeks later on the sympathectomized side and were not so pronounced. Royle and Hunter believed that the plastic component of the muscle tonus depends on the sympathetic nervous system and that in the presence of an injury

to the voluntary nervous mechanism, the plastic tone is raised and spasticity results. The role of sympathectomy, according to them, is to weaken the muscular rigidity and to give the voluntary nervous mechanism an opportunity to take over the control of muscles. The author reports eighteen cases of spastic paralysis of the upper and lower extremities in which Hesse of their institute performed sympathectomies. A good result was obtained in six, an insignificant improvement in nine, and no effect in three. The author concludes that sympathectomy and ramisection, as formulated by Royle, is capable of giving good results in a high percentage of cases and that sympathectomy is the operation of choice in spastic paralysis. It is advisable to employ massage and other mechanical and physical therapeutic methods for a long time after the operation. Patients with a diminished cortical control an abnormal psychic condition and an indifference as to their disease are not suitable for the operation. Ankylosis of joints, deformities of joints and tendons, and too long a lapse between the onset of the disease and the time of operation are not infrequent causes of failure of the operation.

Tumors of Urinary Bladder—On the basis of the material of the urologic clinic of the Moscow Clinical Institute Abramyan and his associates conclude that the incidence of neoplasms of the urinary bladder in the region of Moscow is quite significant and that more than half of these are of a malignant character. Physicians connected with chemical, textile and pharmaceutical industries handling nitro or amino products should familiarize themselves with the symptoms of neoplasms of the urinary bladder. A rational classification of tumors consists of separating them into infiltrating and non-infiltrating growths. The method of choice in treatment of noninfiltrating tumors is electrocoagulation through a cystoscope whenever possible. In extensive papillomatosis, extirpation of the bladder is indicated. In infiltrating tumors located in the fundus or anterolateral aspects of the bladder, partial resection is indicated. In tumors of the trigon area and of the sphincter, extirpation of the bladder with transplantation of the ureters is indicated, provided the disease has not advanced too far and the ureters are not involved. In such instances, it is better not to intervene but to limit treatment to cystostomy, electrocoagulation and chemocoagulation. Roentgen therapy of tumors of the bladder is not satisfactory. Radium is applicable only for control of hemorrhage or in instances of inoperable tumor.

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Contribution to Knowledge of Purpura Annularis Telangiectodes (Majocchi) G. Nordin—p 782

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*Tularemia Its Symptoms and Possible Occurrence in Finland O. Sievers—p 800

Lipschutz Cells ("Centrocytes") in Lichen Ruber Planus—On histologic examination in ten cases of lichen ruber planus and one of psoriasis vulgaris directly following lichen ruber planus, Olin established the occurrence of "centrocytes" (Lipschutz), i. e., cells whose protoplasm contains single and double granules of varying size, easily stainable with hematoxylin. According to Lipschutz, these granules consist of centrioles which belong to pathologically changed, pluricellular microcentres. In some of the cells, Olin demonstrated simultaneously with the granules a microcentrum of normal kind which, he says, testifies against the centriole nature of the granules.

Possible Occurrence of Tularemia in Finland—Because of the presence of tularemia in the adjacent countries, its occurrence in Finland is considered probable. Sievers tested the ability of 1,062 serums to agglutinate *Bacterium tularensis*. In one case an agglutination of 1:160 took place. Agglutination tests of this serum with the abortus bacillus, typhoid bacilli and paratyphoid bacilli gave negative results. The patient had fever and small swollen glands in the groins. Repeated reactions one week and two months later were positive in the dilution 1:320. Tularemia is strongly suspected although the source of infection and the portal of entry are unknown.

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DERMATITIS DUE TO WOODS

CHAIRMAN'S ADDRESS

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CHICAGO

The greatly increased interest manifested in recent years by dermatologists in external irritants as a source of dermatitis, together with the fact that the exhibit of our section for this meeting deals with that topic, has prompted me to select for the subject of my address a source of irritation which is well recognized, but which appears to me to have greater possibilities than is generally recognized.

My interest in this subject was particularly aroused by the following case:

REPORT OF CASE

G O, a business executive, had been troubled for a number of years with a dermatitis of the hands and feet affecting particularly the toes and palms. He had been treated by a number of dermatologists in New York, Baltimore and Chicago. To his knowledge a fungus had never been recovered from the lesions and several attempts by me were likewise unsuccessful, so that the eruption can be classed only as a recalcitrant eruption of the hands and feet. On March 18, 1932 he presented himself with a different clinical picture, at this time showing a severe erythematovesicular dermatitis of the face, neck, hands and forearms with so much accompanying edema that the eyelids were nearly closed. This condition had been present for two weeks. He stated that he had a similar attack on January 14, which was even more severe, as in this earlier outbreak the popliteal spaces were also involved and the chronic dermatitis of the palms was greatly intensified. He was suffering from acute coriza at the time. This dermatitis persisted with varying intensity but within four weeks was showing some improvement. He then went to Florida, and the acute dermatitis subsided completely within two weeks. He returned to Chicago on March 1, and on March 3 the dermatitis recurred, this being the attack which had persisted until the time he was seen on March 18.

The clinical picture was so obviously that of a dermatitis due to external irritation and the speedy recurrence following his return to his home environment was so suggestive that he was questioned carefully on several occasions but no contacts of a suggestive nature could be discovered. He was asked about hobbies which might bring him in contact with irritants and stated that his chief outside interest was in archery. Questioning about the materials used in the targets showed that he did not handle these. By March 31 twelve days after his first visit the dermatitis had largely subsided but he returned five days later with a severe recurrence of two days duration. On this occasion having had external irritants distinctly in mind during the interim he volunteered the information that

he had been scraping his archery bows just before the last attacks, and then recalled that he had been similarly occupied just before the two preceding attacks as well, and that the exacerbations during these outbreaks had followed the same procedure. He had on his own initiative applied some of the sawdust moistened with water to a relatively uninvolved area on the forearm and when seen twenty-four hours later showed a strongly positive reaction. This was repeated, the sawdust of white pine being used as a control. The latter gave a negative reaction while the sawdust from the block of wood from which the bows had been made caused a definitely positive reaction. The dust of the same two woods was soaked in alcohol and the tests repeated with the same result, except that the positive reaction was in this instance much stronger.

The patient stated that when working with the bows he usually perspired freely, and so was asked to apply the dry sawdust to the moist skin when perspiring. He did this a few days later, applying the dust to the left forearm, which was less intensely involved than the right, and after this application the dermatitis became more severe on the left forearm than on the right.

COMMENT

The best archery bows are said to be made from the wood of the yew tree, and it was this wood, imported from England, which had been used in this instance.

The fact that dermatitis due to contact with woods and their dusts may occur is well recognized, but this has applied principally to various exotic tropical woods. Pusey has recently had a case of dermatitis occurring in a carpenter which was found to be due to contact with the sawdust of the common poplar, and Levin lately reported a case in which sawdust used for sweeping was the irritating agent. The wood or woods from which this sawdust was obtained could not be determined in this instance, but it is probable that it came from native woods.

My experience with this case led me to examine the literature dealing with this source of dermatitis, and I was impressed with its wide scope, as evidenced by an abundance of articles dealing with different woods and various phases of the subject. No one of these, however, included all of the woods which have been reported as capable of producing a cutaneous response or the variety of ways in which the contacts occur.

That this subject is not new is shown by the fact that according to Fovama¹ one of the earliest known cutaneous diseases in the Orient was dermatitis due to contact with the milky white juice of *Rhus vernicifera* or the Japanese lacquer tree for as early as the seventh century A. D. a Chinese medical book ("Ping-Yuan-Hon-lun") gave a full description of the disorder. Modern attention however seems to date back only to 1893 when Jones² described dermatitis among shipyard workers employing exotic woods and Sternberg² reported cases among cabinet makers in Vienna using the same type of woods.

¹ Read before the Section on Dermatology and Syphilology at the Eighty-ninth Annual Session of the American Medical Association, June 14, 1924.

² Owing to lack of space this paper has been ably aided by omission of the table listing the wood causing dermatitis and their use. The table will be included in the final report which he will be glad to send on request.

¹ Tozama, Tr. Far East. J. Trop. Med., 4: 1924.
² Internat. Lab. Off. Contr. Literature, 27.

The importance of contact with woods and their dusts as a source of dermatitis is attested by the attention given to the subject by various officials in reports dealing with industrial hazards probably the most important of which is the report on poisonous woods by the International Labor Office at Geneva and by the fact that in some countries the effects of certain of these woods are brought under the workmen's compensation acts, notably in the case of West African boxwood, the effects of which are brought under the act in Great Britain British Columbia New South Wales and Minnesota. In the judgment of the Imperial Insurance Office in Germany these morbid conditions were regarded as industrial diseases rather than as accidents. Among the woods which have received official attention from the industrial standpoint are coco-bolo, satinwood, teak, mohwah, lemon wood, acacia, Borneo rosewood, olive wood, cocos wood, salben and partridge wood.

Because of the industrial aspect greatest attention has been given to those cases in which the dermatitis has resulted from contact with the dusts produced in working with the woods themselves but eruptions have occurred from contacts of other types. In several instances proximity to the tree alone is said to be sufficient for the production of a dermatitis, this being the case with *Eucalyptus hemiphloia* and *Eucalyptus maculata*,³ *Aloe*⁴ and *Comocladia dentata*.⁵ Toyama¹ showed how this may be possible as 0.0000015 cc of urushiol, the toxic agent of the lacquer tree, can produce a dermatitis when applied to the skin in a drop of oil and small amounts of the sap can be carried by wind dust or insects. Smoke from the burning branches of the mango tree⁶ has been recorded as producing dermatitis. Contact with any part of the tree is sufficient in the case of these trees as well as with the various types of rengas woods. Upwich⁷ described an instance in which two companies of soldiers were affected after wading in a river the banks of which were covered with rengas trees apparently due to contamination of the water by fruit which was exuding latex. Persons living in houses constructed of *Aroeira* have been affected by the timber, and the use of furniture made from rengas has produced dermatitis especially when the furniture has become worn. Contact with bark particularly in stripping, is another method of exposure as with *Eucalyptus macrohynchus*, *globulus* and *hemiphloia*,⁸ *Melaleuca*⁹ and Brazilian walnut.¹⁰ In some cases the action of the bark is due to the chemicals contained, while in other instances it is said to be merely the mechanical result of the irritating effect of spicules of the rough bark.¹¹ Handling of either the juices or the wood itself is productive of dermatitis in the case of *Anacardiaceae*, such as *Melanorrhoea mangaya* and *curtisi*, *Melanochyla auriculata*, *Glutas*, *Mangifera kemanga*¹² and *Dysoxylon richii* and *muelleri*.¹³ Maiden¹⁴ reported dermatitis ("tea itch") from the climbing of trees of the *Melaleuca* species.

While handling some of the woods in any way may give rise to an eruption, many writers emphasize the

fact that other woods are toxic chiefly or only when there is contact with the sawdust or powder, as from sandpapering. This has been noted in regard to macassar wood,¹ teak,¹⁰ Brazilian walnut,¹⁷ blackwood,⁶ and *Murapenna*.¹⁸ The majority of cases of dermatitis from woods occurs in those whose occupations bring them in contact with the dust and sawdust derived from the woods. The number of woods capable of causing trouble in this way is surprising although, as is to be expected, there is a marked variation in the frequency with which different woods produce the eruptions and as a rule the more common offenders are of tropical origin, while the woods of temperate climates are only occasionally at fault. This is probably because trees of temperate climates contain such minute amounts of the toxic agents.² Toyama¹ found that in general the toxicity of a wood is proportional to the amount of toxic substance contained, and this explains the reason for the greater irritating effect of the Japanese lacquer tree as compared with other types of lacquer trees, such as those of Formosa, Indo China and Burma. On this basis it is to be expected that different lots of the same wood might result in a varying incidence of toxic manifestations, and Auld¹⁹ has shown for satinwood that there is great variation in the amount of alkaloid in different specimens. Furthermore, the toxicity of closely related species of wood may vary according to its source for it has been said⁹ that coco-bolo wood from Panama will produce dermatitis, whereas that from Nicaragua will not, and Brigalow itch from handling *Acacia harpophylla*¹ in Queensland is well known in some parts of the country, and unknown elsewhere.

As one report states, the precise origin of the toxic effects of woods does not seem in general to have been accurately determined. In some cases the irritating factors have however been accurately identified. Mathes and Schreiber¹² expressed the belief that irritation from woods is due to nonsaturated resinous acid in a free state, while Czimatis and Hageman² stated that from the chemical standpoint resinous oils and alkaloids are responsible. In the case of *Hippomane mancinella* a glucosidal substance isolated from the sap seems to be the active poisonous principle. From *Peroba amarella*,²¹ a group of irritating alkaloids, called aspidospermine has been isolated whereas the resins are secondary factors. The turpentine and essences in the reservoirs and secretory ducts of the hemlock spruce and Norway spruce are blamed. Auld¹⁹ spoke of the resin of *Chloroxylon swietenia* or East Indian satinwood, as usually nonirritating, but he has isolated an alkaloid known as chloroxylon as the irritant. The resins may on the other hand provoke a dermatitis in those who have been previously irritated by the alkaloid. In the case of cocos wood a resin is said to be at fault. Iwakawa²⁴ found that the fissures and cavities of the Tagryasan nut tree contained a sulphur yellow powder from which the irritant substance chrysophanhydroanthron, a substance allied to chrysarobin, was obtained. Brigalow itch is said to be due to a fine yellow powder found in the bark of the Queensland

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hands, aptly described by the term "crocodile hands," which he found common among workers with chestnut, and which he attributed to the action of coloring matter in the bark. The ingestion of the lacquer from *Rhus vernicifera* gives rise to a scarlatiniform eruption which Toyama¹ regarded as an indication of a specific effect of the toxin on the skin. The latex of *Hippomane mancinella*, when fresh, is caustic as is that of *Plumeria rubra*, according to Bretin.⁴

All of the foregoing types of eruption are of the specialized and unusual varieties. In the vast majority of cases, on the other hand the cutaneous reaction is the usual picture of dermatitis venenata and may present simply an erythema although as a rule the outbreak is of a more severe grade with vesicles, bullae and at times pustules. Edema is usually an outstanding feature of the attack and many writers emphasize an erysipelas-like appearance as a striking feature. The follicles are not particularly affected for only in the case of macassar wood¹ was such a localization cited. As is to be expected, the face, neck, hands and forearms are the sites usually involved and the genitalia are affected rather frequently. In some instances the dermatitis extends far beyond the contact areas and may become generalized, as noted with rengas woods by both Hornsey⁵ and Ridley¹⁰ and with macassar wood by Buschke.¹⁰

The noxious action of practically all woods is increased when the patient is perspiring and in some instances dermatitis is produced only when the patient's skin is moist. A number of observers have called attention to this, and Ridley¹⁰ in stating that he believes rengas poisoning affects most those who perspire most, recalled that the poisonous oil in *Rhus* is converted into a black nontoxic lacquer by alkalis, he stated the belief that when the perspiration is alkaline in reaction, the action of the toxic agent may be prevented by its conversion. An oily skin has likewise been found to be a predisposing factor.⁷ In some instances the wood has been noted to be more harmful when moist as in the case of oak⁴⁶ and Brazilian walnut.¹⁷

With the majority of woods producing dermatitis there are noted reactions in other parts of the body as well. Next to the skin the mucous membranes are most frequently mentioned. Conjunctivitis with intense lacrimation, at times iridocyclitis and even keratitis,²⁴ sneezing, increased nasal secretion, epistaxis and pharyngitis are seen in many cases. Involvement of the respiratory system may be evidenced by dyspnea, bronchitis and asthmatic and "influenzal" attacks. Headache, lassitude, dizziness and fainting spells, nausea, vomiting, fever, urinary disturbances and paresthesia are among other symptoms produced, together with palpitation, sweating and chills. The general reactions are particularly severe in those affected by West African boxwood and at times paralysis of the motor nerve endings results from the action of the alkaloids of this wood. The symptoms of poisoning by jacareuba¹⁸ include dermatitis, thirst and oliguria, and these may be brought back months after an attack by the application of an alcoholic extract of the wood to the skin of the forearm. Friese¹⁸ stated that andiroba produces photophobia and a feeling of heaviness of the limbs, while poisoning with several Brazilian woods of the family Sapotaceae causes falling of the

hair. Wechselmann³⁰ reported insomnia as one of the symptoms of satinwood poisoning. Pardo-Castello stated that the sap of *Hippomane mancinella* is so toxic that one drop of it placed in a wound on the foot of a rabbit or a guinea-pig causes death within a few minutes. There is a legend to the effect that those who sleep in the shade of the tree do not awaken, and it is known to the natives as the "tree of death."⁴⁵ In fact, some of the tropical woods which have not been reported as giving rise to dermatitis may produce these general reactions. Friese, in his report on 626 cases of intoxication from Brazilian woods, found the air passages affected in 184 cases (29.4 per cent), the skin of the hands and feet in 181 (28.9 per cent), the nose and eyes in 163 (26 per cent), the genitalia in 49 (7.8 per cent) and the circulatory system in 49 (7.8 per cent).

Once a person has become sensitized to the woods or their dusts the future course is not always the same. With satinwood Cash³⁷ said that the affected workers may be divided into classes. In the first, after a primary attack of dermatitis, the affected persons are able to resume the same work without further trouble, while in the second group relapses occur immediately on the resumption of work and the men are obliged to abandon the workroom in which satinwood is prepared. Cash himself has not seen any persons who have been able to resume work, but Wechselmann³⁰ and Jones²⁸ have recorded such instances. Friese¹⁸ found that patients affected by pao ferro or others of the family Caesalpinoideae, became increasingly sensitive, while Cabiuna, Aroeira and Gonçalo-ales gradually produced immunity. Schwartz¹⁷ found that some of the men affected by Brazilian walnut if they continued work, developed a tolerance in a few weeks and recovered completely, while others could not continue. Little⁴⁹ commented on the frequency of lacquer dermatitis among foreigners, but found that immunity was acquired by the workers. Practically all apprentices react at first she stated, but as they continue work the sensitivity diminishes. If they stop work for a few weeks, a slight reaction lasting only a few days occurs on the resumption of the occupation. No immunity to the fig is developed, according to Berlin.⁵⁰

That a sensitivity once developed is often lasting is evidenced by Friese's observation that workers irritated by woods of the Ipe group develop recurrences on resuming work many months later, and John⁵¹ described the case of a worker with dermatitis from teak who had a prompt recurrence on resuming work four years later. Friese also observes that the colored races are more sensitive to the effects of trees of the Ipe group.

Patch tests have furnished valuable aid not only in establishing the diagnosis, but in determining the particular irritants present in the different woods. The moist sawdust is usually sufficient for this purpose, although in some instances it may be necessary to use alcoholic or ethereal extracts. When patch tests are negative, the reaction in some instances may be due to the use of old woods.

There is considerable diversity of opinion as to the nature of the reaction producing the dermatitis and other symptoms. Some writers, as Wechselmann believe that the condition is distinctly allergic and due

⁴⁵ Bretin P. M. Contribution a l'etude de l'origine vegetale de certaines dermatites. Thec de Lyon 1909 no 79.
⁴⁶ Schulmann E. and Detouillon P. Paris med 1 55 (Jan 16) 1932

⁴⁷ Mayers M. R. Indust. Bull 11 342 (Aug) 1932

⁴⁸ Record and Mell. Timbers of Tropical America. New Haven Conn. Yale University Press 1924 p 371.
⁴⁹ Little Brit M J 1 1112 1924.
⁵⁰ Berlin C. Dermat Wechschr 90 733 (May 31) 1930.
⁵¹ John A. Arztl Sachverst Ztg 5 100 1913 quoted by Wechselmann (footnote 30).

to the biologic action on the cells rather than to a chemical irritation while others as Low,² believe that the sensitization is purely physical or chemical, and that neither immunity nor anaphylaxis in the true or physiologic sense is obtainable. Czimatis and Hageman²² expressed the belief that in some instances there is idiosyncrasy and in others an anaphylactic hypersensitization, they did not agree with Wechselmann that all cases can be classed as anaphylactic. Brugel and Perutz believed that in the case of alder the reaction was on an allergic rather than a contact basis. Oppenheim reviewed Wechselmann's opinion and felt that further investigation was necessary to prove that the reaction is truly anaphylactic. Touton³ stated that idiosyncrasy is due to an antibody-antigen reaction, and recalled that Doerr had said that idiosyncrasy is a part of anaphylaxis, and that the experiments of Prausnitz and Kustner have demonstrated this. Several writers, including Lagrange,⁴ Brugel and Perutz¹⁴ and Gougerot and Blamoutier,⁵ have discussed hemoclastic crises as a result of exposure to woods. In the case of Gougerot and Blamoutier the patient had been working almost exclusively with violet ebony for two years, and with other woods for fifteen years. He took his first vacation in ten years and on returning to work, after an absence of two weeks, developed on the second day a severe dermatitis. After his recovery he was tested with the dust of mahogany and then walnut without result but within twenty minutes after the application of dust of violet ebony, the leukocytes fell from 8,400 to 6,200. Itching began at the site of application after two and three-fourths hours, and a dermatitis appeared the next day. Following the application of the dust in the form of a patch test the leukocytes fell from 7,700 to 4,800. Gougerot and Blamoutier felt that they had been able to desensitize their patient by the application to the unbroken skin of an alcoholic tincture of ebony in progressively increasing strength. These writers stated that the anaphylactic nature of the eruption is shown by the clinical evolution of the eruption, by its progressive intensity, a shortened period of incubation and by the leukocytic shock, characterized as the most constant characteristic of the hemoclastic crises.

These various observations should lead one, I believe, to accept the common type of dermatitis due to contact with woods and their dusts as allergic, in line with the conclusions reached by Bloch, W. Jadassohn and others in their observations dealing with dermatitis venenata which were so well summarized by Pusey²³ at the last International Congress of Dermatology and Syphilology.

The International Labor Office²⁴ has recommended hygienic measures to be taken to guard against the toxic effects of woods. It suggests (1) exhaust ventilation to remove dusts (2) suitable covers for mechanics working with wood (3) the wearing of overalls that fit closely about the neck (4) cleansing of all exposed parts after work and (5) no employment of persons susceptible to the handling of irritant woods.

I have not thus far dealt with the type of dermatitis which is most interesting particularly because it concerns common woods. This is the "forest essence" dermatitis or woodcutters' eczema which has been described in France and Italy. Spillmann¹ in 1921 described the case of a young forest worker who after carrying some logs of oak wood which had been cut

some weeks before, developed a dermatitis in the contact areas and later on the genitalia. The patient's grandfather was similarly affected whenever he handled freshly cut oak, and one of his uncles, as well as numerous other villagers, had presented similar eruptions at various times. Spillmann ruled out contact with plants but did not think that the oak bark itself could be responsible, and suggested that the eruption might be due to fungi growing on the bark. In 1929, Longin²⁵ stated that he had seen a case of similar type fifteen years earlier. In that instance the patient was affected only when he entered a forest containing freshly cut wood. The writer stated that the question of other plants being responsible has been ruled out by the fact that patients have been affected while working at home or in lumber yards. Longin emphasized contact with freshly cut wood as important, and declared that the action of the contact is constant, as it is constantly reproduced under the same conditions. Unlike the response to a uniformly irritating plant, as the nettle he believed that a previous sensitization is necessary in the case of forest essence dermatitis, and that this susceptibility, once established, is persistent thus constituting an anaphylactic phenomenon analogous to that seen in hay fever. He incriminated the woods of oak, beech and in one instance, acacia. He stressed the importance of location in diagnosis, the hands, face and genitalia being involved regularly. The dermatitis may vary from simple erythema to a severe vesicular and edematous eruption most marked on the eyelids and accompanied by conjunctivitis. A masklike leontiasis of the face may result from repeated attacks. In 1931 Dubreuilh²⁶ stated that he had seen some cases of this disorder, and attributed it to the bark as boards or the sawdust of the offending woods do not cause any trouble. Oak logs were the causative agents in most of his cases but chestnut logs were responsible in one instance, and the plane tree in another. He like Spillmann did not think that the woods must be freshly cut, as in one of his cases the eruption resulted from handling wood which had been cut and in the open air for one year. He also stated that with a single exception, his patients noticed that the wood caused trouble only when it was moist, attacks occurring on rainy and foggy days, and he believed that this eliminates the theory that the eruption may be due to cocoons on the bark. He confirmed Longin's statement that work in the forests is not necessary, and also pointed out that the eruption may occur without direct contact with the trees although outbreak takes place much more promptly, beginning within a few hours after contact. He supported Spillmann's contention that the factor of personal susceptibility is predominant and that this susceptibility which in his opinion is rare is perhaps acquired, since many patients have developed it only after many years of immunity. Once established the sensitivity is persistent and may even increase.

Lagrange⁴ described a case of this type which he investigated from the standpoint of conjunctivitis. His patient developed dermatitis and conjunctivitis from the carriage and handling of wood. Following recovery from a severe attack of dermatitis he used finely pulverized fresh oak bark in a scratch test on the forearm. At the time of the application the leukocytes numbered 8,400 and two minutes later the count had fallen to 4,200 in seven minutes to 3,600 and in eighteen minutes to 3,400 and in twenty-four hours the patient had

²² Low quoted by White (footnote 19).
²³ Touton, *Zentralbl. f. Haut u. Geschlecht* 21, 641, 1926.
²⁴ Lagrange, *B. Pre. et Med.* 112 (Feb. 5) 1922.
²⁵ Longin, *Tr. Internat. Cong. Dermat. et Syph.* Copenhagen, 1929.
²⁶ Dubreuilh, *La. Bull. Soc. franc. de dermat. et syph.* 28, 3 (May 1931).

²⁵ Longin, *L. A. Ann. de derma. et syph.* 10, 178 (Feb.) 1922.
²⁶ Dubreuilh, *W. Ann. de derma. et syph.* 19, 192 (Feb.) 1931.

a large and pruritic patch of papular dermatitis at the site of the test

Schulmann and Detouillon,⁴⁰ in 1932, pointed out that dermatitis in wooded districts is probably much more common than is supposed, perhaps affecting 2 per cent of the population employed as woodcutters saw-mill workers cultivators fuel woodcutters charcoal burners and hunters. This type of dermatitis develops slowly, is localized to contact regions, but may gradually become generalized, and can be cured readily, often without recurrences if the patients avoid that type of work.

Apart from these cases, however they recognized another type in which the eruption develops suddenly and in which recurrences take place on exposure to wood. This type, which they refer to as forest sensitization is due to a state of sensitivity.

They believed that in the first group which they call wood itch or woodcutter's eczema workers having contact with the resins are probably the ones affected and that the irritant action is chemical in persons with an idiosyncrasy. In the forest sensitization group, on the other hand the picture suggests an anaphylactic phenomenon as the outbreak occurs suddenly in a person who usually has worked in the woods for years although in rare instances the attack may take place on the occasion of a first visit to the woods. Following this the sensitized person develops a recurrence whenever he enters the woods, sometimes even without immediate contact. In these cases the onset of cutaneous changes is preceded by a sense of warmth and by choking sensations.

With regard to the active agent in the production of this type, these writers stated that this has not been determined as yet but that it seems to be of a volatile nature and soluble in water. They added the poplar and elm to the trees recorded by other authors as capable of causing this reaction.

Drapier⁵⁹ and Gougerot⁶⁰ have also written on this subject in France, and Tommasi⁶¹ described cases occurring in the province of Sienna Italy. The latter in supporting the theory of sensitization, pointed out that workers who return to labor in the woods after a long absence are apt to develop the dermatitis for the first time. In his hands all cutaneous tests to determine the offending agent have proved negative.

There should also be mentioned in considering the source of eruptions due to contact with woods, those cases due to caterpillars, grubs, cocoons and parasites found on the bark, including *mucor* or *mucedo* and *Aspergillus glaucus*, as described by Touton,⁶ Cleland,⁸ Foot,⁶² Hall¹¹ and others.

SUMMARY AND CONCLUSIONS

A case of dermatitis due to contact with the dust of yew wood is reported.

Dermatitis due to contact with woods or their dusts is relatively common. Woods of tropical origin are most often incriminated, but it is probable that woods of temperate climates give rise to reactions more often than is generally supposed.

Eruptions may arise not only from direct contact but also from proximity to certain trees and woods.

The majority of cases are seen in those whose occupation furnishes contact with woods or their dusts, and

this furnishes an important industrial health problem well recognized by various official bodies.

The toxic agents are most commonly nonsaturated resinous acids in a free state or alkaloids, but other types of chemicals are responsible in some cases.

Development of dermatitis may ensue after contact of from a few days to several years, but in general the eruptions appear after a contact of from a few days to a few weeks.

Freshly cut wood is as a rule most toxic, but in a few instances the wood becomes more toxic on seasoning.

A variety of clinical pictures may result from contact with woods but the usual reaction is an intense dermatitis venenata, often erysipelas-like, affecting the exposed parts.

Perspiration and schorrrhca increase the possibility of reaction.

A number of symptoms due to involvement of other parts of the body, particularly the mucous membranes and the respiratory system, may occur.

In the case of some woods tolerance may be established, but as a rule sensitivity once established is persistent.

The cutaneous and general reactions may be regarded as an allergic reaction.

Forest essence dermatitis, or wood cutters' eczema of France, is reviewed.

A table of woods capable of giving rise to cutaneous reactions is presented.

TREATMENT OF ACUTE INTESTINAL OBSTRUCTION BY SUCTION WITH THE DUODENAL TUBE

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Of the many hollow tubes which serve the body economy, the alimentary canal is the only one which communicates with the surface at both origin and termination. Advantage has long been taken of this arrangement in dealing with the distended intestinal tube by intubation, when the distention was of other than mechanical origin. The rectal tube and gastric lavage are old and well established therapeutic procedures. It is now twenty-four years since Westermann¹ first used the duodenal tube in the relief of postoperative distention of peritonitis. With the introduction of the smooth tipped duodenal tube for nasal intubation by Levin² in 1921 and satisfactory demonstration of the source of gas in postoperative distention by McIver and his associates³ in 1926 as being largely swallowed air, the relief of postoperative distention through employment of the duodenal tube has become a matter of general practice.

From observations made on the drainage of fluid and gas in enterostomies performed for the relief of

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¹ Westermann C. W. J. Ueber die Anwendung des Dauermagenhebers bei der Nachbehandlung schwerer Peritonitis Fälle. *Zentralbl. f. Chir.* 37: 36, 1910.

² Levin A. L. A New Gastroduodenal Catheter. *J. A. M. A.* 76: 1007 (April 9) 1921.

³ McIver M. A., Benedict E. B. and Cline J. W. Postoperative Gaseous Distention of the Intestine. *Arch. Surg.* 13: 588 (Oct.) 1926.

59 Drapier Rev. colon March 15, 1931, p. 65.

60 Gougerot Rev. colon March 15, 1931, p. 68.

61 Tommasi Gior. ital. di dermat. e sif. 70: 1223, 1929.

62 Foot N. C. J. Exper. Med. 35: 37 (May) 1922.

acute mechanical obstruction of adhesive origin one of us (O H W) was led to attempt decompression in such instances without operation.⁴ We have frequently noted in instances of complete obstruction of the small intestine that soon after the release of the distention by enterostomy even though the adhesive obstructive mechanism is not freed gas may be demonstrated in the colon on the x-ray film. After such automatic reestablishment of the continuity of the bowel following initial release of the distention by enterostomy the discharge of gas and fluid through the catheter is often minimal.

INDICATIONS

It is immediately apparent that the type of obstruction in which the method might be expected to succeed

time in which the obstructive mechanism continues to operate initial decompression with the duodenal catheter serves to improve the patient as an operative risk.

CONTRAINDICATIONS

From theoretical considerations there are two types of obstruction in which the use of the method is contraindicated, viz (1) strangulation obstruction and (2) acute obstructions of the descending colon with enormous distention of the proximal colon. The latter type is essentially a strangulation obstruction in that the competent proximal ileocolic sphincter usually precludes regurgitation into the small intestine and limits the distention to the colon, necrosis gangrene and perforation occurring in the cecum (the most distensible portion of the colon) unless the colon itself is decompressed.

TABLE 1—Classification and Treatment of Intestinal Obstructions

Clinical Classification	Pathologic Classification	Treatment
A Mechanical I Narrowing of lumen 1 Strictures of bowel wall a Congenital { Atresia ↓ Imperforate anus b Acquired { Inflammatory ↓ Traumatic ↓ Vascular ↓ Neoplastic 2 Obturation 3 Compression from without (Especially pelvis and retroperitoneal duodenum)	Simple (except in neoplastic strictures of the colon)	Operation preceded by suction for decompression in late cases except in occlusion of the descending colon
II Adhesive bands { Congenital ↓ Inflammatory ↓ Traumatic ↓ Neoplastic	Simple or strangulation	Suction operation for persistent obstruction and in strangulation
III Hernia 1 External 2 Internal IV Volvulus V Intussusception	Strangulation	Early operation
B Nervous I Inhibition ileus—(Paralytic) adynamic II Spastic ileus—Dynamic	Simple	Suction
C Vascular I Thrombosis and embolism of the enteric vessel II Severance or injury of mesenteric vessels (Operative or blunt trauma)	Strangulation	Early operation

are instances in which decompression instituted at some other level in the blocked intestinal tube alone suffices in dealing with the obstruction. For years it has been uniform practice at the Minnesota General Hospital in dealing with late cases of acute adhesive obstruction of a simple nature to perform enterostomy. Only rarely in our experience has it subsequently been necessary to release the obstructing mechanism. Simple types of adhesive obstruction in consequence constitute the greatest field of usefulness for the employment of the method. It has been our observation that partial acute obstructions of the small intestine may almost invariably be dealt with satisfactorily by decompression with the duodenal tube alone. In most instances of subacute obstruction whether in the small intestine or in the colon suction with the duodenal tube serves adequately in managing the obstructive phase. And in many late cases of simple obstruction of the small intestine

Apart from these absolute contraindications to attempts at decompression of the obstructed bowel with duodenal suction alone there are a number of relative contraindications. In instances of obstruction due to strictures in the intestine whether of simple or malignant nature it is obvious that a direct attack must be made on the obstructive mechanism no matter whether or not decompression of the acute obstruction can be effected by the duodenal catheter. In instances of complete adhesive obstruction of the lower portion of the small intestine decompression by the duodenal tube alone may fail and after a reasonable trial with suction if x-ray films do not demonstrate definite diminution in distention recourse should be had to enterostomy. The appearance of gas in the colon in a complete obstruction indicates not only a satisfactory decompression but also the automatic reestablishment of the continuity of the bowel.

RECOGNITION OF OBSTRUCTION OF THE SMALL

In the occurrence of loud intestinal borborygmi heard with the stethoscope at the acme of intermittent cramps

⁴ Wargenstein O H. The Early Diagnosis of Acute Intestinal Obstruction with Comment on Pathology and Treatment, with a Report of Successful Decompression by Suction in Cases of Mechanical Bowel Obstruction by Nal Catheter Suction Siphonage. *W. J. Surg.* 10:1 (Jan) 1916. *Tr. W. S. S. S.* 1916.

pain, the presence of intestinal colic is established. Though intestinal noises may be heard now and then in other colics or acute lesions of the abdomen, there is no intimate time relation between pain and borborygmi as there is in obstruction of the bowel. Having established the presence of intestinal colic, it remains to be determined whether it is due to organic obstruction of the bowel, food indiscretions, acute enterocolitis or abdominal allergic reactions. On the basis of such general symptoms as the absence or presence of fever, vomiting, diarrhea or progression of symptoms, together with an appraisal of an x-ray film of the abdomen, a differential diagnosis can readily be made.

The diagnosis of acute intestinal obstruction has been discussed at length elsewhere, and only the salient features will be related here. Vomiting is usually a prominent symptom in all acute obstructions of the small intestine, that the conspicuous vomiting of obstruction is essentially regurgitant is indicated in its frequent absence in acute obstructions of the descending colon in which, as has already been stated, the small intestine often does not participate in the distention. Instances of simple obstruction ordinarily present no tenderness or rigidity of the abdominal wall. In strangulation obstructions, with the single exception of intussusception in which the strangulated intestine is within the normal ensheathing cylinder, rebound tenderness may be demonstrated.⁵ In simple obstructions the general condition of the patient is not disturbed till late in the course of the obstruction. The pulse and temperature are usually normal. Patients with strangulation obstruction occasionally exhibit quickening of the pulse early in its course incident to the loss of blood into the peritoneal cavity as well as into the infarcted segment of intestine. With continued vomiting, leukocytosis and occasionally elevation of temperature occur. Diminution of the plasma chlorides, elevation of the non-protein nitrogen in the blood and an alkalosis occur consistently only in high obstructions and then only after persistent vomiting of about forty-eight hours' duration. These occurrences therefore are of no diagnostic value.

IDENTIFICATION OF TYPE OF OBSTRUCTION

When correlated with the clinical signs, the x-ray film is an aid of value not only in determining the presence of obstruction but also in deciding its location as



Fig. 1—A film of the abdomen of a patient with intestinal colic. Limitation of the distention to the colon indicates the presence of an obstructive lesion in the sigmoid flexure (carcinoma). Suction siphonage by nasal catheter is contraindicated in this type of case. Immediate decompression of the colon should be done.

well as in the decision as to whether the obstruction is complete or incomplete. In the alimentary canal of the adult, though gas is normally present throughout, it is visualized on the x-ray film only in the stomach and colon. In the small intestine, the interadmixture between gas and fluid is so intimate that gas cannot be seen except under conditions of stasis when gas and fluid tend to separate out. The visualization of gas in the small intestine of the adult is therefore synonymous with stasis. The stethoscope tells whether it is mechanical or inhibitive (paralytic).

A single x-ray film taken with the patient supine gives more information than plates taken in any other position. It reveals the grade of intestinal distention present and affords fairly reliable evidence as to its location. Roentgen studies made with an enema of barium sulphate, though of great value in subacute and chronic obstructions, are unnecessary and are contraindicated in acute obstructions except in intestinal atresia and where the conjectured presence of an obstruction in the descending colon would appear to need verification by an enema of barium sulphate. In a patient having intestinal colic in whose bowel the distention involves and is limited solely to the colon, as indicated in a film of the abdomen (fig. 1), the diagnosis of obstruction in the descending colon is practically established. If loops of small intestine are distended but gas is also present in the colon, the patient in all likelihood has a partial obstruction of the small intestine (fig. 2A). Almost invariably by the time that the patient with suspected obstruction of the bowel presents himself for roentgen examination, several enemata have been administered, and the persistence of gas in the colon in a patient whose distention is in the small intestine indicates that the obstruction of the small intestine is incomplete. Distention of the small intestine alone without visible gas in the colon means that the obstruction is complete (fig. 3A).

From inspection of the roentgen film of the abdomen, one cannot predict the exact location of an obstruction in the small intestine with the same precision as in the colon. Knowing the normal pattern of distribution of the intestinal coils, as described by Mall,⁷ it would appear that the location of the distended coils would indicate where the obstruction is. The factors that prejudice exact determination of the location of the obstruction by interpretation of the roentgen film are probably these: (1) the shortening of the bowel with obstruction, (2) the increased weight of coils of bowel incident to the collection of fluid within them altering the relative position of heavy coils to their neighbors, the extent of this displacement being limited by the length of the mesentery, and (3) the distribution of gas and fluid within the distended coils, gaseous collections will be readily apparent, whereas a segment of intestine distended by fluid only cannot be detected. On the whole, however, it may be determined with fair accuracy whether the obstruction is in the upper, lower or middle third of the small intestine.

The exact nature of an obstruction is, moreover, less readily determined than its location. In the majority of instances, however, the type of obstruction present can be ascertained with a fair degree of accuracy by correlation of the history, physical signs and the roentgen observations. The correct identification of the precise type of strangulation obstruction present even

5 Wangenstein O. H. Elaboration of Criteria upon Which Early Diagnosis of Acute Intestinal Obstruction May Be Made with Special Consideration of Value of X-Ray Evidence. *Radiology* 17: 44 (July) 1931. The Diagnosis and Treatment of Acute Intestinal Obstruction. *Northwest Med.* 30: 389 (Sept.) 1931.

6 The grade of rigidity present in acute abdominal lesions is dependent on the character of the irritant. Hydrochloric acid is a severe irritant and the greatest rigidity of the abdominal wall observed clinically follows perforation of an ulcer of the duodenum. Perforation of the colon is not attended by such emphatic reflex spasms of the abdominal muscles. When blood escapes into the peritoneal cavity accompanying a strangulation obstruction or in a ruptured tubal pregnancy a grade of abdominal tenderness and rigidity that is distinctly less developed than in suppurative lesions is usually observed.

7 Mall F. P. Position of the Intestines. *Bull. Johns Hopkins Hosp.* 9: 90 1893.

though it may be determined with considerable accuracy, is not of the same moment as the recognition of the type of simple obstruction in that surgical intervention is mandatory in all potential strangulation obstructions. The only strangulation obstruction which may escape detection of the existence of compromise of its blood supply are pure enteric intussusceptions. The cecocolic as well as the ileocolic ileocecal and compound (entero-enteric and colonic) invaginations may be recognized even though the precise type present may not be foretold.

Of the simple obstructions, the type of obstructing mechanism present can usually be correctly identified. There are, of course, notable exceptions, as, for example, obstruction of the intestine by a foreign body such as a gallstone packet of worms or other foreign body. Strictures of the small intestine, whether benign or malignant, may be difficult to identify exactly, but the subacute character of the obstruction, the history, the presence of palpable and visible peristalsis and the occurrence of dilated loops of small intestine as observed on the roentgen film, without serious disturbance of the motility of the small intestine as determined by a barium stasis ray, have sufficed to establish the diagnosis in the few instances that have come under our observation.

As has already been indicated, adhesive obstruction constitutes essentially the important field for decompression with suction-siphonage applied to a duodenal tube. In patients who have previously been operated on, the recognition of the adhesive character of the obstruction is usually readily accomplished. Often the diagnosis may be made over the telephone. Though we have obtained successful decompression in instances of suspected adhesive obstruction of a simple nature in patients who have not presented scars on their abdomens, we have always done so with hesitation and would advocate the procedure in such instances only in partial obstructions. Serious doubt as to the character of the obstruction is indication for determining its nature by operation.

It must also be freely admitted that the exact manner in which an adhesive band kinks the bowel cannot be comprehended without a deliberate exposure of it at operation. The most significant item, however, is definite separation of instances of simple adhesive obstruction from actual or potential strangulations. The presence of actual strangulation, we believe, is invariably heralded by the presence of local physical signs such as rigidity and rebound tenderness. That potential strangulations, such as complete encirclement of a loop of intestine by a fibrous strand without compromise of the blood supply (that is, without hemorrhage into the intestine or discoloration of its wall) may be confused with simple obstruction is readily understandable. When fluid and gas make their way into and distend this incarcerated loop however, the strangulation features will come into evidence as the blood supply becomes compromised.

MECHANICS AND TECHNIC OF DECOMPRESSION BY SUCTION-SIPHONAGE BY NASAL CATHETER

The rationale of relief of mechanical obstruction with the duodenal tube is adequately explained in that decompression of the distended intestine by enterostomy in the majority of instances of simple adhesive obstruction permits the intestine to reestablish the continuity of the intestinal lumen automatically. It is

immediately apparent that the nearer the drainage vent is placed to the site of obstruction the more adequate and complete is the decompression. One distinct advantage of enterostomy over suction-siphonage by nasal catheter is that the intestinal canal above the obstruction may be used as a nutritive tube during the interval while the continuity of the intestinal canal is being reestablished. Attempts at feeding before the obstructive mechanism has relented, when decompression is effected by the duodenal tube, usually results in recurrence of the obstruction.

The small intestine of the adult is an elastic tube of about 20 or more feet in length. The activity of the pyloric sphincter interrupts the continuity of the stomach and small intestine as a single simple tube. Not uncommonly, however, this sphincter fails to present a physiologic block for decompression of the small intestine by suction when the tip of the duodenal tube



Fig 2—A film of the abdomen of a boy of 8 with incomplete adhesive obstruction. The small intestine is greatly distended but there is gas in the colon (two scybalous masses may also be seen in the hepatic flexure). B film after seven hours of suction the duodenal tube is about to enter the pylorus. C decompression is practically complete after twenty hours. Small gaseous collections are still present but no intestinal loops are distended.

is in the stomach. A successful decompression of the obstructed small intestine is more certain if the catheter finds its way through the pylorus into the duodenum. We have made it routine practice, therefore to cut extra holes in the duodenal tube as far back as 10 inches proximal to the tip of the catheter. With the end of the catheter in the duodenum, continuous suction may then be executed simultaneously on both intestinal canal and stomach. It occasionally takes some time for the catheter to enter the duodenum. We have recently been employing a special catheter with a rubber of heavier specific gravity near the tip. After emptying the stomach by suction, we have occasionally been able to intubate the duodenum directly with this catheter. Now and then we have had the patient inhale the fumes of broken pearls of amyl nitrite in an attempt to relax the pyloric sphincter.

In the intestine of the intact dog or in the human intestine excised at necropsy, it may readily be demonstrated, following the introduction of air or water into the intestine, that the exertion of suction on one end is immediately appreciated in the same degree at the other end. When, however, a mixture of gas and fluid is present, the difficulty well known to physicists whether dealing with rigid or elastic tubes comes into play. In simple gaseous or fluid distention, the entire intestine may be decompressed almost at once. When segments are found alternately distended with gas and fluid, decompression will be only slowly effected.

The churning action of a turbulent intestine, alteration in the relative position of the coils of intestine as may be obtained by change of posture and massage of the abdominal wall, serve to disarrange the existing collections of gas and fluid within the intestine and facilitate decompression.

The degree of suction which may be advantageously utilized in an elastic tube is limited by the engagement

intestinal distention being precluded by continuous removal of these by the duodenal tube, absorption of fluid from the distended intestine occurs, resulting in confluence of gaseous increments which may then more easily be removed by suction.

In the employment of suction applied to a duodenal tube in the treatment of mechanical obstruction it is important to follow the decompression by x-ray films made at the bedside. Augmentation of the distention no longer occurring because of the removal of swallowed air and fluid excreted into the stomach and duodenum, the intermittent crampy pain usually stops as soon as suction is commenced, although every vestige of discomfort usually does not subside for some time. The bowel having accommodated itself to a certain grade of distention, no pain will be appreciated if there is no increase in distention. Mere cessation of pain, therefore, does not mean a successful issue. Narcotics or sedatives for the relief of pain are deliberately avoided. Hot packs, however, are employed as a routine measure over the abdomen. The amounts of gas and fluid aspirated give some indication as to how the decompression is progressing, but the only reliable evidence is diminution in caliber of the distended intestinal coils. The appearance of gas in the colon in complete obstruction of the small intestine indicates that the obstructive mechanism has relaxed.

ADMINISTRATION OF FLUID

The detail of the technic of the insertion of the tube and its general management are elsewhere described.⁹ In patients with mechanical obstruction no fluid is permitted by mouth during the time that suction is in force. Fluids are given para-orally in sufficient amounts to provide a liberal daily output of urine (from 800 to 1,000 cc urine per twenty-four hours). From 3,000 to 4,000 cc of 5 per cent dextrose in physiologic solution of sodium chloride usually suffices, given intravenously by the slow drip method. The patient is permitted to suck ice, chew gum or a lemon to stimulate the flow of saliva. Accurate measurements of the fluid and gas removed are always kept. Dechlorination will not occur as long as a liberal output of urine is maintained.

The group of cases in which suction applied to a duodenal tube was employed as the primary mode of treatment has been subdivided into three classes for purposes of analysis, viz (1) those in which decompression was done by suction alone without subsequent operative attack on the obstructing mechanism, (2) those in which decompression was done by suction but operation was subsequently performed because of the conjectured persistence of the obstructing mechanism and (3) those in which treatment with suction was employed but in which operation was necessary to effect complete decompression.

The total number of patients treated primarily by suction is thirty-two. Among this number there were six with recurrences on separate admissions, making a total of thirty-eight decompressions. During this interval, in only nine patients with acute mechanical obstruction of the small intestine was primary operation done. Of this number seven had strangulated external hernias (inguinal and femoral), of the remaining two, one had a stricture of the intestine and the other presented unmistakable signs of internal strangulation.



Fig. 3—Series of flat abdominal x-ray plates made on a patient with complete obstruction of the small intestine due to adhesions to show course of decompression with suction siphonage by nasal catheter. *A* initial plate shows considerable distention of small intestine. There is no gas in the colon. *B* a duodenal tube has been inserted and suction has been applied for twenty-two hours. The stomach is empty and the intestinal distention is somewhat less. The patient has been relieved of all distress. *C* twenty-nine hours after the institution of suction the duodenal tube has passed well into the duodenum and decompression is proceeding rapidly.

of the wall of the intestine in the hole of the catheter where the suction is applied. Even with mild suction, this phenomenon may be demonstrated. We believe that 75 cm of water suction lies within the range of the optimum value.⁸

The time element also affects this issue favorably. The important agents in causing distention of the blocked bowel are swallowed air and fluid emptied into the upper reaches of the intestinal canal. Accretion of

8. Paine J. R. and Wangenstein O. H. Necessity for the Application of Constant Suction to Inlying Nasal Tubes for Effectual Decompression or Drainage of the Upper Gastro-Intestinal Tract with Comments upon Drainage of Other Body Cavities. Surg. Gynec. & Obst. to be published.

9. Wangenstein O. H. and Paine J. R. Nasal Catheter Suction Siphonage: Its Uses and Technique of Its Employment. Minnesota Med. 16: 96 (Feb.) 1933.

The latter case was the only fatal one in the group in which primary operation was done

The patient was a feeble old lady of 69 years who presented intestinal colic and rebound tenderness. The strangulation had been present for somewhat more than forty hours. The gangrenous segment was exteriorized, and the devitalized intestine was cut away and catheters were fastened into each loop after the skin was closed. The operation, which was done under spinal anesthesia (125 mg of procaine crystals), was completed without event, and just as the wound was being closed the patient stopped breathing. She was resuscitated by artificial respiration but died two days later without having regained consciousness.

There were twenty cases in which decompression by suction alone was done. In this group there were three deaths, two of which occurred some time after decompression had established the continuity of the intestine due to causes unrelated to the obstruction. The remaining death in this group, which is directly attributable to obstruction of the bowel, occurred because we failed to operate. The nature of the obstruction was fully appreciated, but it was believed that the patient's chances were better with conservative treatment until her general condition became more satisfactory. Undoubtedly, after the initial decompression, it would have been wiser to have assumed the risk of operation, knowing the hazard of permitting the gallstones to remain within the lumen of the intestine.

The patient aged 66, was very ill on admission, the picture of obstruction being complicated by the presence of a large sloughing bed sore over the sacrum, the entire gallbladder had sloughed into the intestine and the obstructing packet of

There were eleven cases in which decompression was done by suction but operation subsequently performed because of the conjectured persistence of an obstructing mechanism which was continuing to operate. There was one death in this series, the patient dying of pulmonary embolism seven days after operation.

The poorest results were obtained in the third group, in which treatment was begun with suction but in which operation became necessary to effect a complete



Fig 4—Continuation of series in figure 3. A decompression is fairly complete after fifty-five hours. At this time the duodenal tube was clamped at intervals and clear fluids given orally. B plate taken eleven hours later. There is considerable gas in the cecum and ascending colon indicating that the obstructive mechanism has relented. There are still a few coils of distended small intestine. The patient has had no intestinal colic since.

decompression. Of seven such cases, three were fatal, making a mortality of 42.87 per cent. Two of the patients died, however, because of ill-chosen surgical measures for which one of us (O. H. W.) accepts full responsibility. Judging from the nature of the obstruction, as found at operation, we believe that both these patients would have gotten well had conservative treatment been persisted in, or had simple enterostomy alone been done at operation instead of freeing the adhesive mechanism. Undoubtedly one of the chief factors in the continuance of the persistently high mortality of acute obstruction is this anxiety on the part of the operating surgeon to do the operation of election, viz., to undo the obstructive mechanism and restore the continuity of the intestine at once. One can really appreciate, however, that, when a short band has obstructed the intestine for a few days, it frequently becomes actually fused with the intestine, and an attempt to liberate it results in opening of the intestine. Our experience has been that spillage of intestinal content, even though minimal in amount, in acute obstruction usually foreshadows death from peritonitis.¹⁰ The other death in this group was that of a young Mexican woman who was six months pregnant. She had not been operated on previously, and the nature of the obstructing mechanism remained in doubt. At operation a small viable enteric intussusception was found and easily reduced, still the patient died of peritonitis three days later.

On the whole the group of cases in which subsequent operation is necessary on the obstructive mechanism after satisfactory decompression has been achieved are constituted largely by instances of universal adhesions and strictures of the intestine itself. There have been a few instances of adhesive obstruction in which recurrent attacks indicated the necessity of operation.

TABLE 2—Summary of Mortality of Acute Mechanical Obstruction of Small Intestine

	Number of Cases	Deaths	Mortality per Cent	Deaths Unrelated to Obstruction	Corrected Mortality per Cent
A Treatment by suction siphonage with nasal catheter					
1 Decompression by suction alone	20	3	15.0	2	5.0
2 Decompression by suction but with subsequent operation performed on obstructing mechanism	11	1	9.0	0	9.0
3 Treatment by suction initially but operation necessary to effect complete decompression	7	3	42.8	0	42.8
Total mortality in groups with suction					
Patient mortality	32	7	21.9	2	15.6
Case mortality	33	7	21.4	2	13.1
B Treatment by immediate operation	9	1	11.1	0	11.1
C Other cases					
1 Manual reduction of strangulated hernia	1	0	0.0	0	0.0
2 Patient's moribund on admission	3	3	100.0	0	100.0
Total mortality by patients	4	11	27.5		
Total mortality by cases	31	11	35.5		

gallstones lodged in about the midportion of the intestine never changed their position as frequent subsequent roentgen examination indicated. A partial decompression was effected two hours after the commencement of suction and was complete in forty-eight hours. The patient was free from distress two hours after suction was started. Alternate suction and feeding were continued through the tube for seven weeks; the patient meanwhile improving. Death was due to perforation of the intestine by the gallbladder and its contained stones. An obviously necessary operation was deferred because of the generally poor condition of the patient. Timely operative intervention might have saved this case.

10 Wangensteen, O. H. Therapeutic Generalizations in the Management of Acute Intestinal Obstruction. The Technique of Intestinal and Small Bowel Surgery. *Ann. Surg.* 66: 933 (June) 1933.

at which only single bands were found. Such instances in our experience have not been numerous. On the contrary, it has been remarkable to note how many patients with obstruction of adhesive origin of severe grade have been well without any suggestion of obstructive features after decompression by suction.

In those instances in which a satisfactory and complete decompression was achieved only after the elapse of considerable time (forty-eight hours and more) we failed to observe any manifestations of a toxic influence. Almost invariably the patients ceased to complain of intestinal colic soon after the commencement of suction, although frequently several hours elapsed before the patient was entirely free from distress. There was no acceleration of the pulse on the contrary, if it had been somewhat hurried on admission

with the duodenal tube unaided by other therapeutic measures is recommended for simple obstruction of the small intestine only. The adhesive variety of obstruction in which the establishment of enterostomy permits of automatic reestablishment of the continuity of the bowel is particularly suitable for decompression with the duodenal tube. Strangulation obstruction in which the blood supply of the intestine is compromised and instances of acute obstruction of the descending colon in which the small intestine usually does not participate in the distention are contraindications to the use of the method. Most partial or incomplete mechanical obstructions of the small intestine can be adequately decompressed by this means alone. Some of these will necessitate a subsequent direct attack on the obstructing mechanism itself. In complete obstructions of the small intestine in which the obstructing mechanism does not relent after an adequate trial with suction, recourse should be had to operation (enterostomy).

A diagnosis of obstruction and determination of whether simple or strangulation obstruction is present can be made in most instances with a high degree of accuracy. Whenever there is serious doubt concerning the nature of the obstructing mechanism, operation should be done. The only adequate manner of ascertaining whether decompression is being obtained is by taking subsequent x-ray films at the bedside.

The true value of suction-siphonage by nasal catheter in the treatment of acute mechanical intestinal obstruction will become apparent only when the method has been given wide clinical trial.

ABSTRACT OF DISCUSSION

DR. ERWIN R. SCHMIDT, Madison, Wis. About a year and a half ago I had an opportunity to watch this method and since then it has been instituted at the University of Wisconsin. I can subscribe to everything that the authors have said. There are certain things that I can add from experience. We have used continuous negative suction in a great number of cases in which we found nausea or vomiting after operation. It keeps the stomach empty, renders these patients comfortable and serves to supply fluids by mouth during the time the patients are nauseated and are vomiting. Poissonnier in France recognized this principle in treating perforated ulcers of the stomach in 1906. This brings me to the second group of cases in which we have used it: those cases in the abdomen in which there has been some question as to the final diagnosis. My belief is that this method is fundamental and should be understood by every practitioner of medicine because it will lead to a more accurate and more careful diagnosis. Most of the mortality and morbidity is probably due to an inadequate examination, understanding and evaluation of patients before they come to operation. This method will give one time to evaluate the patient properly and in that way one will reduce the mortality rate markedly. I believe that as a result of this method the old teaching that an obstruction means an emergency operation is antiquated. In the service with which I am connected an obstruction in the abdomen is no longer considered an emergency operation. By means of this decompression we are able to evaluate patients to find out what their nonprotein nitrogen is, what their chlorides are, what their kidney function is, and then we have a pretty good idea as to what the patient will stand. We use the method not only in the evaluation of patients before operation but also postoperatively. The facts and principles that were presented in this paper are so fundamental that every practicing physician should understand them. They can be used in the home; they can be used in the hospital. If they are properly used in the home it will be possible to carry moribund patients along, transfer them to the hospital, properly evaluate their condition and give the proper treatment.

DR. WILLARD BARTLETT JR., St. Louis. I have been using this method of decompression of the intestine by continuous

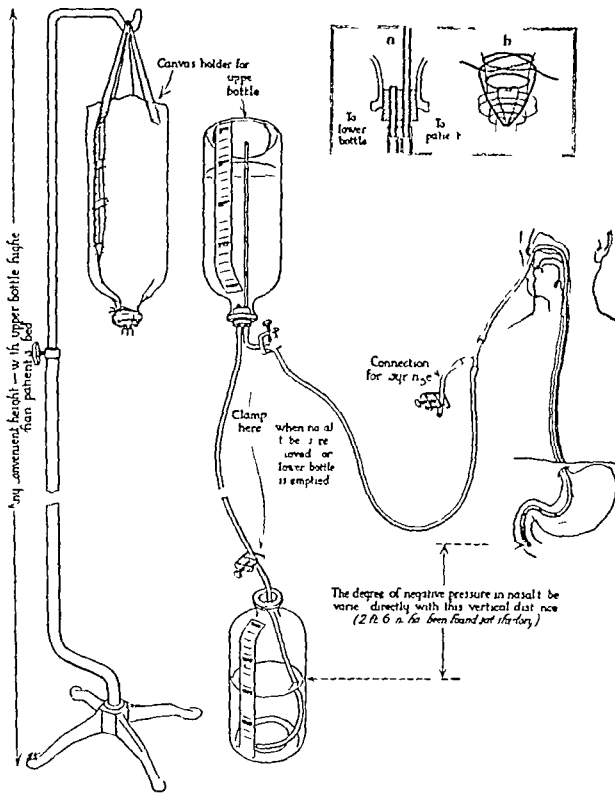


FIG. 5.—Diagram of suction apparatus used at the Minnesota General Hospital. The upper bottle is hung by a canvas sling from an irrigation standard. The lower bottle rests on the floor. A Y connection is attached to the duodenal tube so that a syringe may be conveniently used to clear the tube if it becomes plugged. (The C. F. Anderson Company, 214 South Seventh Street, Minneapolis, assembles this apparatus for distribution.)

before the institution of suction it became slowed as the decompression progressed. The general appearance and aspect of the patient usually exhibited improvement commensurate with the diminution of intestinal distention. Even in those instances in which suction was persisted in for some considerable time (group III) but in which a fairly satisfactory decompression failed to establish automatically the continuity of the intestine necessitating resort to operative intervention, there was no suggestion in the patients' appearance or objective signs to indicate a decline in their general well-being.

SUMMARY AND CONCLUSIONS

Suction-siphonage by nasal catheter constitutes a satisfactory manner of dealing with many instances of acute mechanical intestinal obstruction. Decompression

positive suction from the stomach since 1930, with the greatest satisfaction. It is my sincere belief that in the absence of necrosis of the bowel wall, the patient who is treated in this manner together with proper replacement of water, salt and minerals will have a very hard time dying. I am satisfied that he will not get worse under observation but will get into a far better condition to stand a radical corrective operation if such becomes necessary. By keeping track of the intake of fluid by mouth and of the return of fluid from the nasal catheter under suction, one can tell exactly what the physiologic status of the obstructed intestine is as it varies from time to time with progress under treatment. One can tell in terms of cubic centimeters per hour at what rate ingested fluids disappearing from the stomach are returning from the intestine into the stomach. I have taken the pylorus as the landmark and embodied it in this term of polyoric balance in the anatomic, not in the physiologic sense of the word. When these patients are first seen, they are in a state of negative pyloric balance, that is, they are refilling their stomachs from the obstructed intestine. That negative balance diminishes under treatment until a zero point is reached and then, as they recover, a positive balance develops. I will differ with the authors in this one point, that in the patients with obstructing lesions in the left half of the colon the ileocecal valve is usually incompetent and suction treatment at least in certain of them may be successfully and safely used.

DR O. H. WANGENSTEEN, Minneapolis. Only after this method of treating acute mechanical obstruction has been tried in the hands of many practitioners under varying circumstances will its limitations and possibilities become well defined. The method has certain limitations, as the enthusiast will soon discover. When employed judiciously it will obviate the necessity for many operations and when combined with timely surgery in instances in which the method as a sole therapeutic agent is inadequate in dealing with the obstruction, its employment I believe will lead to definite lowering of mortality. It may appear difficult to comprehend the logic of its use in many instances of adhesive obstruction when one contemplates the nature of the interference of the band to the continuity of the intestine. When one recalls, however, that simple enterostomy in similar instances often serves the purpose adequately without a direct attack on the obstructing mechanism itself, one may better appreciate how nasal catheter suction siphonage may be successful in effecting decompression of the blocked bowel. It may not be amiss to remember that it is often one's own fixed ideas that constitute the most difficult hurdles. Two factors that contribute largely to the unwarranted mortality of acute intestinal obstruction are late diagnosis and ill chosen surgical procedure. It is difficult to adjudicate or appraise accurately the sins of omission or commission but I have the firm conviction that a large number of neglected cases of bowel obstruction may be salvaged by critically selected and well executed surgical procedures. In the absence of a strangulation obstruction the operation of least magnitude is the safest and wisest conduct for the patient. In late simple obstruction the performance of an aseptic enterostomy as described here by Drs. Orr and Gatch holds out the greatest hope for the patient. When strangulation is present, the viability of the bowel must be determined; no matter how ill the patient de vitalized intestine must be excised. Exteriorization with secondary anastomosis in such instances in the usual case is safer than primary resection.

Infantile Paralysis—The first outbreak in the United States was described by Caverly in 1894 in Vermont while Wickham, of Sweden in 1905, first described the mild non-paralytic type of case and recognized the slight infectiousness of the disease. In 1909 Lindsteiner and Popper first successfully transmitted the disease to monkeys. During the succeeding years of intensive study of poliomyelitis not a great deal of progress had been made in the prevention and treatment of the acute condition but great advances have been recorded in the restoration of function of paralyzed muscles and much has been added to our knowledge of the extent of infection in the population and the probable methods of spread.—Harrison W. T. *Poliomyelitis: How Is It Communicated?* *Pediatrics* 3:2 (Sept.) 1933.

THE PREHALLUX IN RELATION TO FLATFOOT

F. C. KIDNER, M.D.

DETROIT

In 1929 I¹ described an operation for the correction of certain cases of intractable flatfoot by the removal of the prehallux or accessory scaphoid and transplantation of the posterior tibial tendon. In that article the

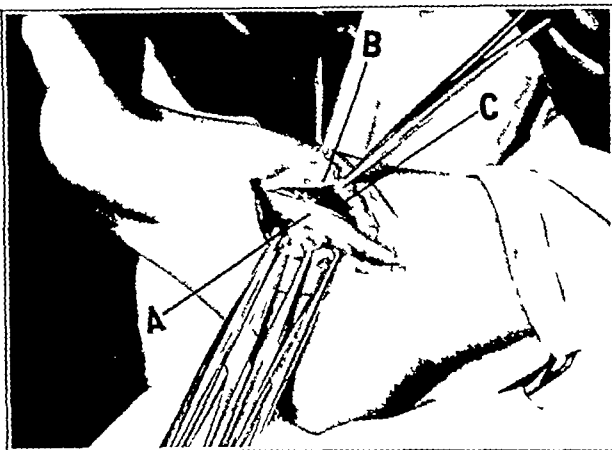


Fig. 1—A posterior tibial tendon passing over inner end of prehallux to insert in cuneiform. B upper flap dissected off superior surface of the scaphoid, C superior surface of scaphoid.

literature was reviewed and a bibliography given. It was stated that the prehallux is a common and frequently unrecognized anomaly which, by changes in leverage, interferes with the normal mechanics of the action of the posterior tibial muscle and thus produces weakness of the longitudinal arch and flatfoot of a type highly resistant to the usual conservative methods of treatment.

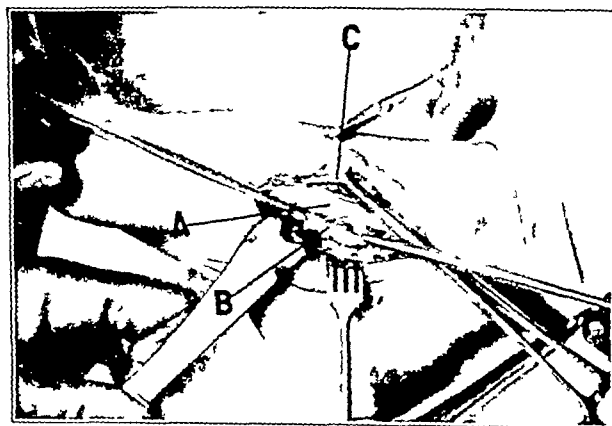


Fig. 2—A and C as in figure 1. B lower flap dissected off inferior surface of scaphoid and astragalus.

It was also stated that in the presence of the prehallux, whether as a separate bone or as a prolongation inward of the scaphoid, there is an abnormal insertion of the tibialis posterior tendon. Instead of passing under the inner end of the scaphoid to insert in the lower sur-

From the Orthopedic Clinic of the Children's Hospital of Michigan.
Read before the Section on Orthopedic Surgery at the Fifth Fourth Annual Session of the American Medical Association, Milwaukee, June 1, 1933.
1. Kidner, F. C. *J. Bone & Joint Surg.* 11: 631 (Oct.) 1929.

face of the two internal cuneiforms and bases of the second and third metatarsals, the tendon is displaced inward and upward to pass across the inner tip of the scaphoid, to which it is attached firmly before finally inserting into the medial surface of the internal cuneiform. This change in course and insertion results in

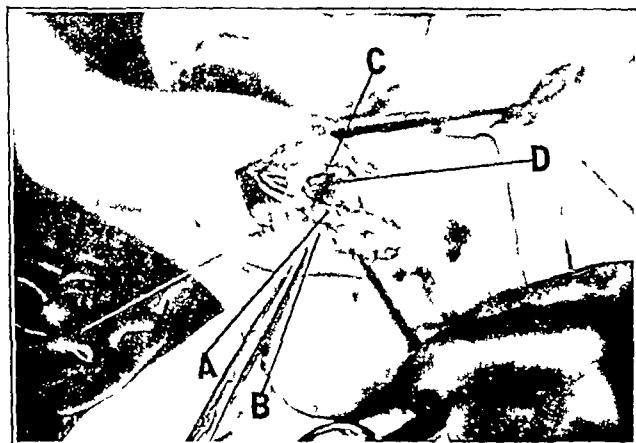


Fig. 3—A tendon transplanted downward and outward between lower flap (B) and scaphoid. Deep stitch in place. D osteotomized inner surface of scaphoid. B lower flap. C upper flap.

the loss of the tendon's normal suspensory action and transforms it into an adductor of the forefoot instead of an elevator of the tarsus and longitudinal arch. In other words, the proper function of the *tibialis posterior* is that of an inward rotator of the foot around the longitudinal axis, passing through the middle of the head of the astragalus. This function is entirely lost in its abnormal attachment.

It was also shown that the inward projection of the scaphoid, whether united or not, interferes in the full inversion of the foot, either by pinching of the internal lateral ligament of the ankle or by actual impingement on the internal malleolus, which, in time tends to increase valgus, through reflex overactivity of the abductors, in their effort to prevent pain.

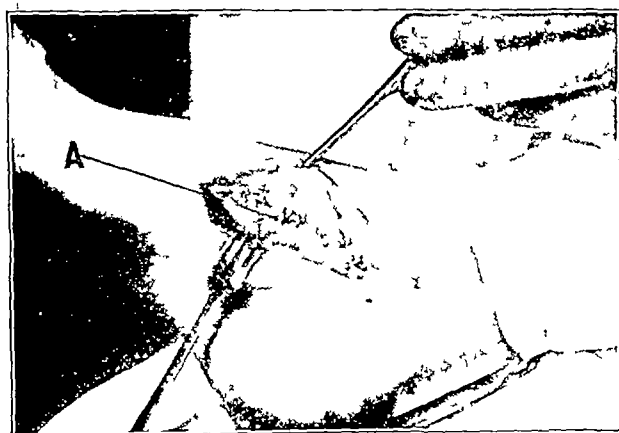


Fig. 4—Two flaps sutured over bare bone end and tendon.

Since the publication of that paper, my associates and I have continued to study this problem and to employ and improve the operation with increasing success. Certain new points have developed. Most important of these is the fact that many cases of flatfoot in which the *prehallux* is absent show the same abnormal course of the posterior tibial tendon that is associated

with its presence. The tendon passes across the inner end of the scaphoid instead of under it and thus loses its suspensory function and its mechanical advantage as a support to the longitudinal arch. The second point is the fact that, in the presence of the *prehallux*, the outward excursion of the scaphoid on the head of the astragalus is increased so that the motion of the astragaloscaphoid joint is abnormally great producing what is, in effect, an outward subluxation of the whole forefoot or an inward subluxation of the anterior end of the astragalus. This leads to a considerable increase of ligament strain with marked pain and foot weakness.

The continued study of this condition has convinced us of its importance in the etiology of a large class of cases of what may well be considered congenital flatfoot. This conviction has led us to employ the operation for its correction as a routine in all cases, whether in children or adults, which present a *prehallux*, either free or united, or which present a posterior tibial tendon whose attachment is transposed inward and upward.

OPERATION

The operation has been somewhat modified in order to secure a dependable fixation of the posterior tibial tendon in its new bed. It now consists of the following essential steps:

A generous incision, with slight downward or upward convexity, is made through the skin and fascia over the course of



Fig. 5 (case 1)—A before operation. B after operation.

the posterior tibial tendon from a point just in front of the internal malleolus nearly to the base of the first metatarsal. The tendon is dissected clear, through the whole length of the incision, care being taken to preserve its attachment to the *prehallux* and to the cuneiform. From the superior and inferior borders of the tendon two fascial ligamentous and periosteal flaps are dissected outward from the superior and inferior surfaces of the scaphoid and anterior astragalus. The dissection of these flaps, subperiosteally, leaves the upper and lower surfaces of the inner third of the scaphoid exposed; the tibial tendon still being attached to its inner tip. The inferior flap is carried outward for at least an inch. The tendon is then freed from its scaphoid attachment with a thin osteotome in such a way that the medial fibers are detached from the medial surface of the cuneiform, but the inferior fibers are left attached. This leaves the distal insertion of the tendon underneath the long arch and assures a straight line of pull when the tendon is transposed.

It is then possible to transpose the whole tendon outward and downward to the lower surface of the scaphoid. Usually the contour of the lower surface of the scaphoid is such that a natural groove exists for the reception of the tendon. If not such a groove is cut. The inner end of the scaphoid and the *prehallux* is then removed so that the remaining bone is flush with the astragalus and cuneiform. Bone wax is forced into the raw surface of the scaphoid to prevent new bone formation, an unpleasant complication that has occurred. If the inferior periosteal ligamentous flap is strong and firm, two number 2 chromic gut sutures are passed, by means of a very short sharply curved cutting needle from below upward, at a

point as far outward as can be reached, through the flap through the tendon, and then down again through the flap to be tied in the sole of the foot. These stitches anchor the tendon three-fourths inch outward from its original position and directly beneath the scaphoid.

The upper and lower flaps are then sutured together with chromic gut, so that the scaphoid is covered and the tendon firmly buried in its new bed. If the inferior flap is weak as a



Fig. 6 (case 2)—Before operation showing prehallux and displaced tendon.

result of the chronic foot strain the tendon is fastened in its new bed by means of chromic stitches passed through two holes drilled through the middle of the scaphoid. In anchoring the tendon, care is taken to see that it is under tension and that the foot is in moderate cavus and supination. The skin wound is then closed and the foot put up in plaster in the overcorrected position for six weeks. This is sufficient time to allow the posterior tibial muscle to take up the slack in its tendon and to allow complete fixation of the tendon in its new bed. Corrective shoes are then fitted and physical therapy and muscle education carried out for another eight weeks. If the case has been a severe one, outside upright braces with inside T straps are worn during this period.

COMMENT

The operation has been uniformly successful in three ways. First, by transforming a perfectly flat foot into one with a good longitudinal arch. Second, by relieving symptoms that were due to foot strain. Third, by removing the unsightly prominence of the inner end of the scaphoid, which is subject to trauma and frequently painful. Power of voluntary full supination always follows the operation.

In 1928, I Zadek published a paper in which he recognized the fact that the attachment of the posterior tibial tendon was often abnormal in the presence of prehallux, but he thought that the tendon ended at its attachment to the inner end of the scaphoid. Actually, the attachment to the tip of the scaphoid is in the course of the tendon which continues on to insert finally in the inner and anterior surfaces of the internal cuneiform and base of the first metatarsal and into the ligaments of the metatarsocuneiform joint. The considerable number of operations we have performed for this condition have given us an opportunity to study the anatomy of the posterior tibial tendon with great care. The textbooks state that the normal course of the tendon includes fibers attached to the interior surface of the scaphoid but that the main attachment is a fanlike arrangement of fibers spreading over the

inferior surfaces of internal cuneiforms and reaching forward to the bases of the second and third metatarsals. The textbooks also state that there is some attachment to the sustentaculum tali. In our operations we have seen all possible arrangements of the insertion from the textbook type to the completely transposed tendon just described. In a frequent variation, the tendon splits three-fourths inch posterior to the scaphoid, one branch inserting into the lower surface of the scaphoid and the other into its inner end.

Speculation as to the cause of the transposition of the tendon is interesting. Evidently the presence of the prehallux does not explain it completely, because it occurs in cases of flatfoot which show no prehallux. There is an interesting analogy between this anomaly and that of the anterior tibial tendon mentioned by Peabody.²

The mechanical disadvantage under which the tendon must work in its abnormal position is often well demonstrated at operation. When the foot is completely supinated and the forefoot adducted, the tendon will seem to wrinkle or fold up longitudinally so that it is pinched between the malleolus and the scaphoid, thus explaining the tenderness and some of the pain.

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ABSTRACT OF DISCUSSION

DR. CHARLES W. PEABODY, Detroit: During the last five years I was responsible for the work in an independent orthopedic clinic that sees quite a large number of postural defects. Thanks to a very competent physical therapy staff this clinic has been getting prompt and permanent results by the usual program of support and postural reeducation but still there were a certain number that failed to respond. When about four years ago Dr. Kidner called my attention to the anatomic variations associated with what he calls 'prehallux' I found that this anomaly was roentgenologically at least demonstrable in most of these children that did not respond. Ever since my early acquaintance with Thomas Dwight's monograph on the supernumerary bones of the foot I have been conscious of the existence of his 'tibiale externum' or 'accessory scaphoid' and had frequently been bothered with it in attempting a com-



Fig. 7 (case 2)—After operation showing good arch.

portable fit of the Whitman weak foot brace. I also had noted Sever's article some fifteen years ago on successful relief of symptoms by removal of these bones. But I had never heard of the theory of mechanical interference with the normal supinator function of the tibialis posticus muscle and tendon until Dr Kidner worked it out and so far as I know his is an original contribution in this respect. Since 1929 I have had the opportunity of operating on twenty-four patients with this condition. In all I have encountered along with the bony abnormality the same deviation in the posterior tibial tendon and with almost the same technique have seen the same elimination of symptoms, objective and subjective. It has seemed to me that the mechanics of muscular control of the human foot places a major burden on the invertors or supinators with the tibialis posticus bearing the brunt of this and I am convinced that Dr Kidner is right in his proposition that the displacement of the insertion of this tendon which has uniformly been seen to accompany the scaphoid anomaly in all the operative cases tremendously impairs its effectiveness. The definitely localized pain of which many of these children complain and the frequent localized tenderness and swelling are due to the abnormal strain at this point in the attempt at normal function. It may sometimes be due to the chafing of the enlargement against the shoe, with a sort of bursitis over it, or possibly also to a traumatic epiphysitis or apophysitis at this point as at the heel and at the tibial tubercle. The prehallux cases in my series presented both tenderness by palpation and subjective symptoms. The final check up showed absence of pronation in all as contrasted with marked pronation originally. It is my impression that these anatomically had a good arch the pronation being the relatively greater defect that is, a relaxed foot rather than a structural flatfoot and on postoperative check up all showed a normal arch. In fact four years ago the clinic registered 293 cases of defective foot posture. Of that number I made a diagnosis of prehallux in thirty cases or about 10 per cent. Objective symptoms (defects of posture) or pain were present in 24. Operations were carried out in 21.

DR EDWIN W. RYERSON, Chicago. I have operated on a number of patients with accessory scaphoid without in any way realizing the importance of the suspensory power of the posterior tibial tendon and that it was displaced in its insertion. The significance of this should be recognized by all orthopedic surgeons and the paper is a distinct contribution. I feel that in two of the cases in which I simply removed the accessory scaphoid and diminished the internal projection of the scaphoid without transplanting the posterior tibial tendon and binding it to the outer side the unfavorable results were probably due to the point brought out by Dr Kidner. It occurs to me that in some of the more marked cases of lateral deviation of the foot it might be wise to combine with Dr Kidner's operation the arthrodesis of the joint between the internal cuneiform and the first metatarsal bone afterward placing the first metatarsal at an angle downward to increase the height of the arch. It is possible that this combination would produce a little higher arch although the height of the arch has no real relation to the capacity of the foot for work. Nevertheless in one or two of the pictures that have been shown it struck me that the foot would be a little bit stronger if the arch were a little higher and the combination of Hoke's operation with Kidner's operation might mean a slight improvement.

DR FREDERICK C. KIDNER, Detroit. I want to thank Dr Peabody and Dr Ryerson for their discussions. Dr Peabody spoke of the duration of after-treatment. I said six weeks in plaster because most of my cases are in a crowded free clinic in which we haven't enough physical therapists to give the necessary time and accurate care that should follow the early removal of plaster. I think that Dr Peabody is right that three weeks of complete fixation is enough if one has the properly trained physical therapists to take care of the cases in the early stages. Dr Ryerson spoke of arthrodesis. In one or two cases I have done an arthrodesis of the scapho-astragal joint and in one or two others of the cuneiform metatarsal joint but those were cases in which the arch had been fixed in rigid flatfoot by long use. I felt that the tendon itself would not be strong enough to lift such fixed flatfoot. In certain cases it is wise to do an arthrodesis in conjunction with transplantation of the tendon.

SUBPERIOSTEAL RESECTION OF THE TIBIAL SHAFT IN OSTEO- MYELITIS

D. M. BOSWORTH, MD

NEW YORK

One of the most startling statements that I can remember during my undergraduate training concerned the regeneration of a complete new bone shaft in the young following subperiosteal excision. As I remember it, the source of the experimental and practical work on which this statement was made was not given. Nevertheless the fact that nature could replace such a complicated and necessary structure of such gross size seemed unbelievable. The fact, however, was accepted by me and like many such was not again thought of until September 1928. At that time the first case herein reported was seen. Previous to this time I had found it a frequent medical rumor that such regeneration could occur but it was not until the literature was inspected following the completion of the first case that the sources of theory and practical application were discovered.

The work of three men Ollier in 1857, Nichols in 1904 and Phemister in 1915 stood out as major constellations in a rather small firmament. The literature in regard to this subject is very limited if one excludes all reports of tibial defects not due to osteomyelitis and those not consisting of practically a complete diaphysis. Only six men have reported having removed a complete tibial shaft with the expectation of periosteal regeneration and of these only four gave the end results. Haas and Beck mentioned excision of tibial shafts as having been done with the possibility of securing regeneration but they did not report any specific end-results. Ryerson in a discussion stated that he had three cases of successful regeneration of the entire tibial shaft and one failure. Clopton reported four successful cases and two partial failures of regeneration.

Nichols wrote a lengthy monograph applying Ollier's principles of bone regeneration in cases of removal of the tibial shaft for osteomyelitis. He reported in detail three cases of complete removal of the tibial diaphysis with good functional results obtained within from a few months to four years after operation. It is noteworthy that he delayed removal of the tibial shaft for the formation of an involucrum and the inference is that he left it in place. No immediate postoperative roentgenograms were shown so that one cannot be certain whether or not he left the involucrum as a partial supporting structure. He stated however that when collapsing the periosteal tube there was a crackling sensation. This again would lead one to infer that some or all of the involucrum was left inside. He made an important remark regarding operative removal, viz. that whenever possible one should taper the stump of diaphysis remaining attached to the epiphysis at either extremity of the periosteal tube so that no dead space is left. (This was done in all of my cases, necessitating sequestrectomy from the distal portion of the diaphysis in two of them, after almost complete healing of the rest of the wound and beginning regeneration of the tibial shaft.) He mentioned two cases prior to his own in which tibial regeneration occurred. One was done by Cheever in 1870 and the second by H. W.

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Cushing in 1899 Both were in Boston and were locally reported The extent of removal and speed of regeneration were not given, but the final results were reported as complete successes He stated that the best time for such an operation is eight weeks after infection, but, as will be seen from my subsequent case reports regeneration can take place at any period He likewise makes sterilization of the exposed periosteum an important factor (Sterilization, however in a widely infected periosteal tube must certainly be impossible and was not attempted in any of my cases All

article is the basis on which all subsequent work on regeneration of the tibial shaft has been carried out

Animal experimentation with subsequent human operation, based on Ollier's principles and Nichol's practical results, were reported by Phemister in 1915 He went on from experimental and theoretical conclusions to remove a tibial shaft in two cases In a girl aged 3 years he secured a perfect result, with no shortening, two and three-fourths years after operation In his second case, that of a man, aged 45, he obtained practically no regeneration, and though the case was

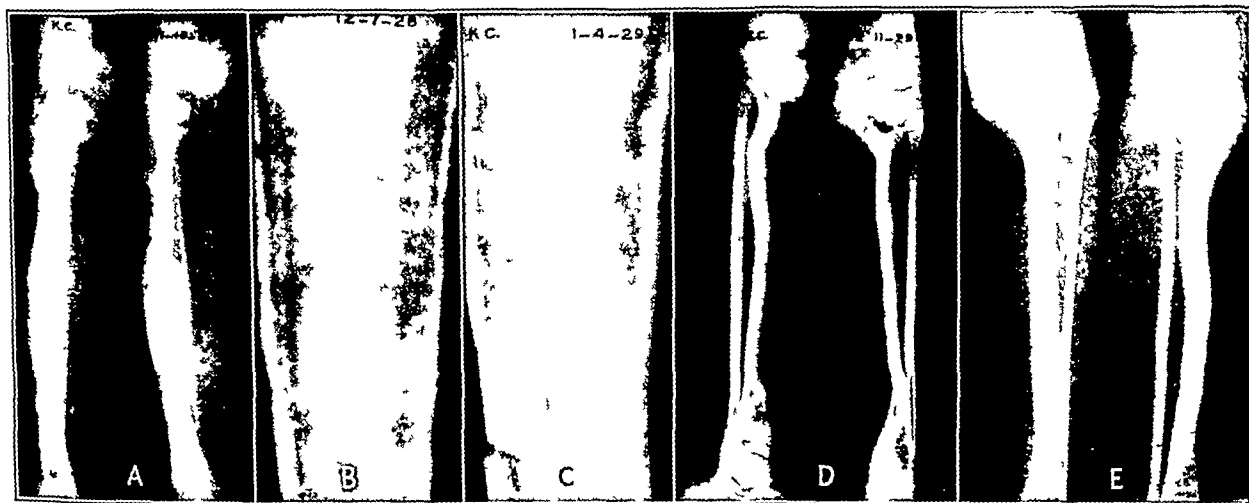


Fig 1 (K C)—A preosteotomy condition of the tibia riddled with sequestrums The epiphyseal plate is involved B complete excision of the tibia C faint line of periosteal regeneration one month after operation This is the slight shadow just to the right of the fibula D new tibial shaft four years after operation E increased size of the tibial shaft following excision of adherent scar

the tubes were formed without disinfection, except once when the infection was so virulent that the periosteal tube was packed widely open) His end-results showed good function, with full weight bearing, through an irregularly shaped shaft, which eventually developed a marrow cavity He reported no failures, or partial failures, such as my last three cases may prove to be Just as successful and safe lengthening of the tibial shaft was first done by LeRoy Abbott, and the principles evolved by him have not been changed, so Nichol's

reconstructed later it must be classed as a failure from the standpoint of the present article

Haas reported no cases but stated that excision of the tibial shaft was followed by restoration of the bone in the majority of cases and advised leaving the wound wide open I feel that one must be warned against such a procedure Removal of a complete shaft and drainage only at the ends of the periosteal tube give sufficient margin of safety in the face of any osteomyelitic infection of the tibia With the periosteal

Summary of Histories of Six Cases

Patient	G B	G C	N H	I N	J S	F W
Age	16 year	8 years	11 years	6 years	7 years	9 years
Sex	Male	Male	Male	Male	Female	Male
Regeneration	Part	Full	Part	Full	Full	Part
Organism	Staph	Staph	Hem staph aureus	Staph	Staph	Staph
Duration of preosteotomy	7 month	15 months	2½ months	10 months	1 month	6 months
Involucrum pre ent	Slight	None	Marked	Slight	Slight	Moderate
General health	Anemic chronic sepsis	Anemic chronic sepsis	Septic cachectic amyloid	Very toxic amyloid	Toxic	Anemic cachectic amyloid emaciated
Tibia removed	Right	Left	Left	Left	Right	Left
Other foci of infection pre ent pre operatively	Right femur left tibia	Right radius left tibia left arm right elbow	Right leg left ankle left talu	Left elbow right femur both knees	Right ankle right talus	7th left rib 8th right rib left femur left hip right tibia great toes six +
Previous operations	Three	Seven -	Three	Eight	Three	None
Subsequent operations for infection	Sequestrectomy of distal stump of old diaphysis	None	Squartectomy of distal stump of old diaphysis	None	None	1 ironychia of both great toes
1 foot of osteotomy on other foci	Healed all	Healed all	Healed all	Healed all	Healed all	No effect
Proximal epiphysis involved	No	Yes	Yes	Yes	No	No
Distal epiphysis involved	Yes	Yes	Yes	Yes	Yes	Yes
New marrow cavity	Yes	Yes	Yes	Yes	Yes	Yes
Loss of length	1½ inches	1½ inches	1½ inches	1½ inches	1½ inches	1½ inches
Full weight bearing	10 months	10 months	10 months	10 months	10 months	10 months
Returned to tibia	Twice	Twice	Twice	Twice	Twice	Twice
Subsequent excised	Yes	Yes	Yes	Yes	Yes	Yes

tube open there is difficulty in covering the new tibial shaft, which has begun to regenerate on the external surface of the leg

A few writers have advised leaving a portion of the shaft in situ to splint the periosteal tube. This procedure, however, really represents the method popularized by Winnett Orr and need not be discussed in this article.

Since there are many reports of repairs of defects in the tibial shaft by the use of the fibula, a portion of the opposite tibia or the femur, one must conclude that excision of the tibial shaft is frequently followed by lack of regeneration. The imposing list of such cases should be a warning against resection of the tibial shaft whenever it can be avoided. I did not consider resection of the tibial shaft justifiable in my cases unless conservative treatment had been well carried out and had failed, leaving the patient either profoundly toxic and overcome by his infection or with definite signs of advancing amyloid degeneration. It is certainly not a procedure to be undertaken lightly, but still it is prefer-

behind in case the involucrum is allowed to remain. In the cases in which full regeneration of new tibial shafts has resulted, there was either no involucrum or very slight involucrum present at the time of operation, whereas two of the cases that have not to date been successful showed marked involucrum.

As will be seen by the table, the duration of the osteomyelitic process has had no influence on the subsequent regeneration of a new tibial shaft. All of my cases gave cultures of staphylococci, though the subdivisional type is unobtainable. One case was reported as hemolytic *Staphylococcus aureus*.

The general health was very poor in all cases, with definite amyloidosis apparent in three of them clinically. In every instance it was a question whether any process would save the child's life. In all, the general health has returned to normal at this time, though in one there has been no influence on healing of the secondary foci of infection. It is interesting to note that among these six cases of tibial infection there were present twenty-one other foci of infection, probably all meta-

static in nature. It is of still greater interest to note that in only one case have these metastatic foci failed to heal promptly following the excision of the main focus, the tibial shaft. They have remained healed to the present time.

Operative procedures directed toward the osteomyelitis of the tibiae and secondary foci, previous to osteotomies, numbered more than thirty, better than an average of five operations to each case.

Subsequent operative procedures, necessitated by infection, have been three in number. They consisted of a sequestrectomy from the distal stump of the diaphysis in two cases and incision

for paronychia of the great toes in a third case. None of the three cases in which complete new weight-bearing tibial diaphyses were regenerated have required a secondary operation for infection or for the securing of continuity of the new tibial shaft. One of the patients fractured his new tibia twenty-three months after osteotomy and developed a fibrous nonunion requiring a sliding graft. At the time the sliding graft was implanted, new medullary bone structure was encountered within the regenerated tibial diaphysis.

Permanent shortening of the leg is a matter of extreme importance and has occurred to some extent in every case. Among the three cases of complete new tibial shafts, the loss in length amounts to one-fourth inch in one case, five-eighths inch in the second and 1¼ inches in the third. This shortening seems to occur immediately following operation and also through loss of growth due to injury of the epiphyseal plate by the infectious process. Two of the patients with complete regeneration suffered injury to both the proximal and the distal epiphyseal plates preoperatively, by the infectious process, and the third patient had an involvement of only the distal epiphyseal plate.

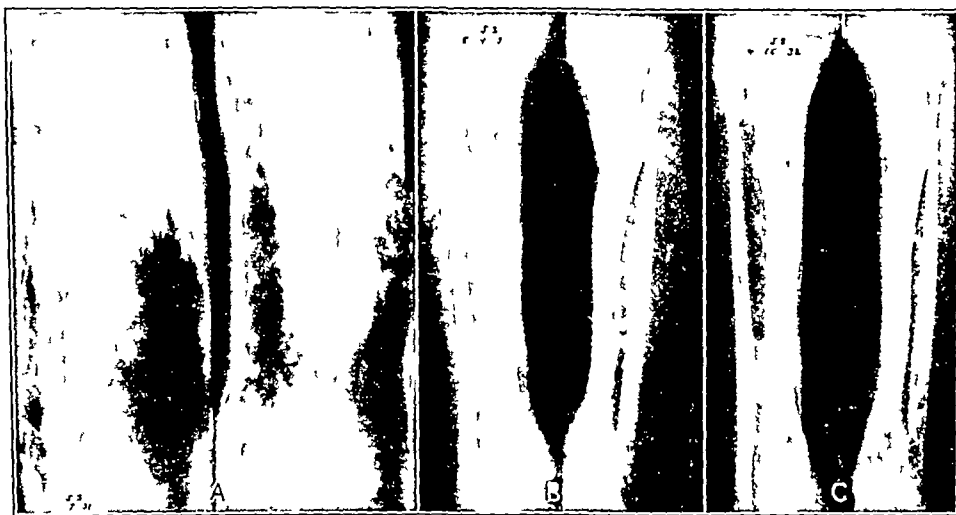


Fig. 2 (J. S.)—A four days after osteotomy showing the area of widely excised shaft with drainage tubes and plaster splint in place. B six months after operation with practically completely reformed tibial shaft. C, fourteen months after operation with completely reformed tibial shaft.

able to amputation of a limb or an eventual death or disability following amyloid disease.

Six case histories are summarized in the accompanying table in which a subperiosteal resection of the tibial shaft and involucrum was done. Three of these regenerated complete new diaphyses, and three to date have failed to do so completely. From a review of the literature and a tabulation of my own end-results, it would seem that the age of the patient was the most important factor in the process of regeneration. I would never expect to obtain a new weight-bearing unit in an individual past adolescence, and I believe that even at this period it is doubtful whether one can rely on sufficient regeneration. I would feel that before the age of 9 years in every case regeneration will take place if the whole periosteal tube is left intact.

I do not believe that leaving the involucrum is necessary to regeneration, and the accompanying roentgenograms show that such involucrum was not retained. Perhaps it would have been better to leave the involucrum in situ to speed up the process of regeneration and to increase the size of the newly regenerated shaft. There is always the danger of leaving sequestrums

New marrow cavities have regenerated through all three of the newly formed tibial diaphyses. Fractures of the new shaft occurred in one case only. In this case, which fractured twice, union was spontaneous in one instance and a sliding graft was necessary in the other. In one case an adherent scar required excision, and following excision the tibial shaft increased very rapidly in lateral diameter. In another instance, owing to the acute illness of the child, the periosteal tube was packed wide open. The result was a rapid formation of a new flat tibial shaft on the external surface of the leg. This required a plastic operation to the soft tissue and skin through a grossly infected area. There was a highly successful immediate outcome, but an unquestionable retardation of the growth of the new diaphysis. To date, a complete shaft has not formed.

When regeneration is going to occur, as seen in these cases, it occurs fairly rapidly. Within a month, a continuous new faint line of calcium is seen lying within the periosteal tube. From this point on the development of the new tibia proceeds in speed with direct relation to the youth of the child. One boy, aged

The operative technic is very simple. It consists of the resection of the tibial diaphysis subperiosteally, leaving pointed wedges attached to the proximal and distal epiphyseal lines. This should be done even if the wedges left are grossly infected, so as not to disturb the epiphyseal plates more than need be. In most instances removal of the grossly infected diaphysis will allow the patient's resistance to overcome all other infectious loci present, including the remaining diaphyseal stumps. If the removal of sequestrums from these stumps at a later date is necessary, it is a simple matter. The periosteal tube should be completely closed along the line of incision by sutures separate from those used to close the skin and subcutaneous tissues. This will prevent an adherent scar. Drainage, which is necessary, will take place at each end of the operative wound where the ends of the diaphysis have been left. The Orr method of postoperative care, which of course includes a plaster boot from groin to toes, is the most satisfactory.

The reports of cases would be so voluminous that they have been omitted. The essential facts have been included in the table.

CONCLUSIONS

1 Six cases are reported in which the tibial shafts were removed subperiosteally, including any involucrum, for osteomyelitis with extreme sepsis and multiple foci.

2 Complete regeneration of a new tibial diaphysis containing a new medullary cavity has been shown to have occurred in three instances.

3 The procedure is an extremely radical one, to be used only when the alternative is a conceivable amputation or death of the patient, from chronic sepsis.

4 Shortening may always be expected. After the age of 8 years failure of regeneration, in whole or in part, will probably necessitate later osteoplastic procedures.

5 All these results and conclusions must not be accepted as final, since obviously, completion of this study cannot be carried out for another ten years.

58 East Sixty-Fifth Street

ABSTRACT OF DISCUSSION

DR D B PHEMISTER Chicago I agree with what Dr Bosworth had to say about subperiosteal resection except with reference to the time and the extent to which it is carried out. The ideal treatment of osteomyelitis would be subperiosteal resection if regeneration of the shaft always followed. That would lessen the mortality, hasten the period of repair, and lessen the frequency with which the disease recurs. Unfortunately because of frequent failure of regeneration of the shaft, great restrictions have to be placed on the use of the procedure. I think it should be used in those locations in which it makes no difference whether regeneration of the shaft takes place or not. For instance all osteomyelitis of the rib and osteomyelitis of the fibula should be treated by subperiosteal resection because it doesn't matter very much whether there is regeneration or not. It should also be used in a limited number of cases of severe infection when it looks as if the life of the patient is threatened. Regarding the time I don't think that it should be performed on the long bone except between the second and sixth weeks during which the soft involucrum can be left behind. That is it should be performed after an involucrum has started out but before it is densely ossified. If one waits until it is densely ossified and then excises the shaft along with the involucrum one will get a failure of regeneration in such a high percentage of the case as to make the procedure unjustified.



Fig 3 (F W)—A old sclerotic deformed remnant of original tibial shaft. B fibula very lightly shown but absence of tibia definite. C five months after osteotomy showing grossly incomplete regeneration at that time.

6 years was walking without support on a completely regenerated tibia within nine months. A second child, aged 7 years, had a completely regenerated new tibia within a year, though weight bearing was not allowed until fifteen months after operation. A third boy aged 8 years had a new tibia, much smaller in size than in the preceding two cases, with weight bearing in sixteen months. The remaining three patients were 9, 11 and 16 years of age. Incomplete new shafts were reformed within about five months but in these cases the new bone formation subsequently proceeded no further. One of the latter (F W) was too recently operated on to determine the outcome.

From these patients whose ages were 6, 7, 8, 9, 11 and 16 years, one must judge that to expect complete regeneration of a new tibial shaft beyond the age of 8 is to invite failure. I do not mean by this that one should never remove a tibial shaft beyond that age. Frequently one has no other choice except that of amputation or prolonged sepsis with its attendant untoward changes. Granting that a new tibial shaft is not developed as occasionally happens, the literature is full of instances in which the defect has been subsequently corrected by osteoplastic operations.

DR J E M THOMSON, Lincoln Neb. Although this procedure may be indicated in certain instances it has a very limited place in the treatment of osteomyelitis and if it is used promiscuously, dire results will follow. I made an analysis of sixty-one cases of osteomyelitis of the tibia that have come to a private clinic (I am speaking of the work of Drs Orr and Thomson in the clinic). In this series I found that only one osteotomy had been performed. There were five patients who came within the age limits in which according to Dr Bosworth this operation would be appropriate. Two of these patients were 6 years of age, two were 7 and one was 8. Three were weak and had chronic sepsis. Two showed myeloidosis and emaciation. In one of these cases both tibias were involved. Four of these patients had previous operations. Involucrum was present in three and the complete shaft was involved in five. Four of the operations consisted of a complete opening of the length of the shaft and adequate drainage. In one there was wide opening of the lower third. Osteotomy was performed in one case. All these were treated by the Orr method of petrolatum pack and cast. As to the results, one patient was operated on again ten years later, healing, his tibia placed in four cases and in the one case in which the shaft was removed in November 1930 drainage continued for six months. With weight bearing complete shaft regeneration took place thirteen and one-half months after the operation. In considering these figures one should keep in mind the fact that one of these patients had osteomyelitis of both tibias. I believe from this study that thorough drainage and adequate after treatment obviate the necessity of doing an osteotomy. I had the same experience with osteotomy that Dr Bosworth had in that the shaft was entirely loosened by the disease process.

DR DAVID M BOSWORTH, New York. These cases were extremely bad ones. I would not remove a tibial shaft unless it was a matter of doing that or amputating the leg. I think that every one who has seen cases of failure of regeneration of the tibial shaft will agree in this.

EXPERIMENTS WITH ANESTHETICS

IV LESIONS PRODUCED IN THE SPINAL CORD OF DOGS BY A DOSE OF PROCAINE HYDROCHLORIDE SUFFICIENT TO CAUSE PERMANENT AND FATAL PARALYSIS

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We wished, in our study, to find the dose of anesthetic agent required when given subdurally to produce permanent paralysis of the hind legs and permanent changes in the spinal cord. Since procaine hydrochloride is the safest and most universally employed drug for spinal anesthesia, our experiments were confined to its use. The data here reported deal chiefly with results following subdural injection of huge doses of procaine in the dog. It was found necessary to give very large doses of procaine in definite concentration to produce permanent ill effects as judged by the behavior of the dog and the microscopic examination of the spinal cord.

Davis, Haven, Givens and Emmett¹ have reported that a dose of procaine suitable for man when given

subdurally to a dog, has resulted in changes in the membranes of the spinal cord and in the spinal cord itself. These changes, however, were not permanent.

EXPERIMENTS

In preparation for injection the dogs without previous medication were placed on the Delhanty table, as modified by Essex and Lundy.² The injection which was made between the fourth and fifth lumbar vertebrae was carried out with technique that would ensure asepsis. Unless spinal fluid aspirated freely before and after the injection the experiment was considered unsuccessful and was discontinued. When indicated, artificial respiration was given by means of a pulmonary ventilator. With two or three exceptions dogs weighing between 18 and 30 Kg were used. The entire spinal cord usually was removed after death. In selected cases when death did not occur spontaneously the dogs were killed from seven to ten days following the injection. Sections were made from the lumbar, thoracic and cervical regions of the spinal cords. Hematoxylin and eosin and Weigert's myelin sheath stains were used. In order that the pathologist might be unbiased in his examinations he was held in ignorance as to the previous treatment of the respective animals, the spinal cords of which he was to study. Control experiments were carried out; these will be described later.

Results.—Twenty dogs (table 1) were given intradural doses of procaine ranging from 500 to 2,500 mg. The concentration of the drug in the injected solution varied from 6.25 to 50 per cent. So far as permanent effects were concerned the concentration of the drug was found to be quite as important as the total dose. For example, 5 cc of a 25 or 50 per cent solution of procaine (1,250 and 2,500 mg, respectively) invariably caused changes in the spinal cord associated with permanent paralysis of the hind legs. However, 25 cc of a 50 per cent solution (1,250 mg) or 10 cc of a 12.5 per cent solution (1,250 mg) failed to produce permanent paralysis or changes in the spinal cord. We were interested to determine the concentrations of solutions of procaine lower than 25 per cent that would cause comparable effects. Five cubic centimeters of a 20 per cent solution of procaine (1,000 mg) produced permanent effects that differed only in degree from those caused by 5 cc of a 25 per cent solution. With the former concentration and quantity degenerative changes extended only as far cephalad as the mid-thoracic region, whereas with the latter concentration and quantity lesions extended as far cephalad as the cervical region of the spinal cord. Five cubic centimeters of a 17.5 per cent solution of procaine (876 mg) did not result in permanent paralysis. It is evident, therefore, that the minimal concentration of procaine that will produce permanent paralysis in doses of 5 cc lies between 17.5 and 20 per cent.

In an effort to come to some conclusion as to the relative concentration of the anesthetic at different levels within the spinal canal and also as to the degree of permeability, trypan blue and methylene blue (methylthionine chloride, U. S. P.) were added to the solution of the anesthetic. These dyes appeared to increase the toxicity of the solution since both animals used in this connection quickly succumbed.

In the two instances in which 5 cc of a 50 per cent solution of procaine was given respiration was par-

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Read before the Section on Miscellaneous Topics, Sessions on Anesthesia at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

¹ Davis, Loyal, Haven, Hale, Givens, J. H. and Emmett, John. Effects of Spinal Anesthetics on the Spinal Cord and Its Membranes. An Experimental Study. J. A. M. A. 97: 1781-1785 (Dec. 12) 1931.

² Essex, H. C. and Lundy, J. S. A Technique That Facilitates Lumbar Puncture in the Dog. Proc. Soc. Exper. Biol. & Med. 29: 751-753 (March) 1932.

lyzed for four and eight hours, respectively. In another experiment respiration was paralyzed for two hours and forty-four minutes following injection of 10 cc of a 12.5 per cent solution. This animal failed to exhibit any permanent effects. All three of these dogs were kept alive by artificial respiration³ throughout the period of respiratory paralysis at the end of which period respiration became spontaneous and adequate.

3 Lundy J S. Adequate and Properly Controlled Artificial Respiration for Surgical Patients by Means of a New Pulmonary Ventilator. Proc Staff Meet Mayo Clin 7: 225-228 (April 13) 1932.

Since the changes in the spinal cord were peripheral in position and such as might be expected to follow increased intradural pressure, a series of control experiments (table 2) designed to increase the intradural pressure were performed. In two instances sufficient physiologic solution of sodium chloride was given to produce very definite symptoms. The salient features were extension of the head and neck, with rolling of the eyes, loss of sphincteric control with voiding of feces and urine, and momentary cessation of respiration. These animals recovered almost immediately and

TABLE 1—Summary of Protocols

Dog	Weight kg	Procaine Given				Respiration	Hind Legs	Pathologic Changes
		Dose Mg	Mg per kg	Volume Cc	Per Cent			
1	18.5	2.00	132	50	50.0	Paralyzed for 4 hours	Permanently paralyzed	In the lumbar portion of the spinal cord there was a slight amount of hemorrhage in the peripheral portion (subpial zone) associated with superficial degeneration of the myelin sheaths. The thoracic portion of the spinal cord was similar to the lumbar except that there was less hemorrhage. Degeneration of the myelin sheaths was less marked in the upper thoracic region and was absent from the cervical cord.
2	96.5	2.00	94	50	50.0	Paralyzed in 7 minutes; remained so for 8 hours	Permanent paralysis; death in 3 days	
3	24.5	1.250	51	50	25.0	Paralyzed for 1 hour 24 minutes	Permanently paralyzed	In the lumbar portion of the spinal cord there was severe but superficial degeneration of the myelin beneath the pia mater with only one small hemorrhage. In the thoracic portion there was only one small patch of degeneration beneath the pia mater. The spinal cord above this level was normal.
4	22.0	1.50	56	50	25.0	Dog died (inadequate ventilation)		
5	28.0	1.250	44	50	25.0	Died suddenly		There was no change in the myelin at the lumbar portion of the spinal cord but there were a few small petechial hemorrhages below the pia mater in one lateral column. There were no changes above the lumbar level.
6	90.0	1.250	62	50	25.0	Paralyzed for 2 hours	Permanently paralyzed	
7	18.5	1.250*	77	50	25.0	Not adequate	Dog died of asphyxia	
8	25.5	1.000	31	50	20.0	Paralyzed for 2 hours	Dog died 3 days following injection	There was definite degeneration in the lumbar segments of the spinal cord as seen with the Weigert myelin sheath stain but the hematoxylin and eosin stains indicated even more extensive degeneration. This degeneration was most marked on one side above the lumbar region. There was no degeneration of the myelin of the spinal cord.
9	90.5	5.0	42	50	17.5	Paralyzed for 15 minutes	No permanent effects	There were no changes in the spinal cord at any level with any stain. There was some diminution in the myelin of some of the nerve roots but this seemed to be due to excessive differentiation. There was no meningitis in this or any other specimen examined.
10	50.0	1.50	41	25	50.0	Adequate throughout	No permanent effects	
11	24.0	1.50	52	25	50.0	Adequate throughout	No permanent effects	
12	28.2	1.50	44	25	50.0	Adequate throughout	No permanent effects	
13	15.8	1.250	79	25	0.0	Adequate throughout	No permanent effects	
14	11.9	625	52	25	25.0	Adequate throughout	No permanent effects	The spinal cord was entirely normal throughout.
15	90.0	1.250	62	100	12	Adequate throughout	No permanent effects	
16	18.3	1.50	68	100	12.5	Paralyzed for 2 hours 40 minutes	No permanent effects	
17	25.5	625	26	100	6.5	Complete and permanently paralyzed	Dog died	There were slight degenerative changes in the peripheral portion of the spinal cord immediately beneath the pia but there were no hemorrhages. All other portions of the spinal cord and nerve roots were normal except such changes as may be accounted for by stain ink artefacts.
18	14.5	500	74	20	2.0	Adequate throughout	No permanent effects	
19	6.0	600	70	60	10.0	Adequate throughout	No permanent effects	The spinal cord was entirely normal.
20	25.0	0	52	0	1.0	Adequate throughout	No permanent effect	The lumbar portion of the spinal cord stained with Weigert myelin sheath stain was normal but in the section stained with hematoxylin and eosin there was a columnar circumscript region of degeneration evidently the site of a needle puncture. All other portions of the spinal cord were normal.

* With trypan blue 0 per cent
† With methylene blue 0 per cent

ran about the laboratory in an apparently normal manner

The experiments just described indicated that pressure, per se, was not the explanation of the changes in the spinal cord, therefore the next control experiments were performed to determine whether the osmotic pres-

anesthetic agent, in terms of body weight, should always be accompanied by recommendations concerning the concentration in which the agent should be given

We are unable to offer any satisfactory explanation for the permanent effects of certain doses of procaine in certain concentrations. It has been shown that the permanent changes in the cord that result in permanent paralysis of the hind limbs of dogs given 5 cc of from 20 to 25 per cent solution of procaine are not due to intradural pressure or to the osmotic pressure of the solution. It might be argued that the long period of low blood pressure that invariably accompanies such spinal anesthesia might result in anemia of the spinal cord, but in certain instances permanent effects did not follow complete respiratory paralysis that endured nearly three hours during which time we have reason to believe the blood pressure remained at a level comparable to that of dogs permanently affected

The central nervous system of the dog is capable of withstanding the action of huge doses of procaine. The doses used for man are proportionately much less. It is probable, therefore, that many of the accidents following the use of spinal anesthesia in man are due to factors other than the action of the anesthetic agent. This may not be true of some other local anesthetics, since Spielmeier,⁴ working with dogs and monkeys, obtained with stovaine (amylcaine hydrochloride, B P) in a maximal dose of 140 mg, lesions in the cord similar to those we obtained with procaine, except that in certain instances with minimal doses he obtained maximal effects. He stated that these degenerative

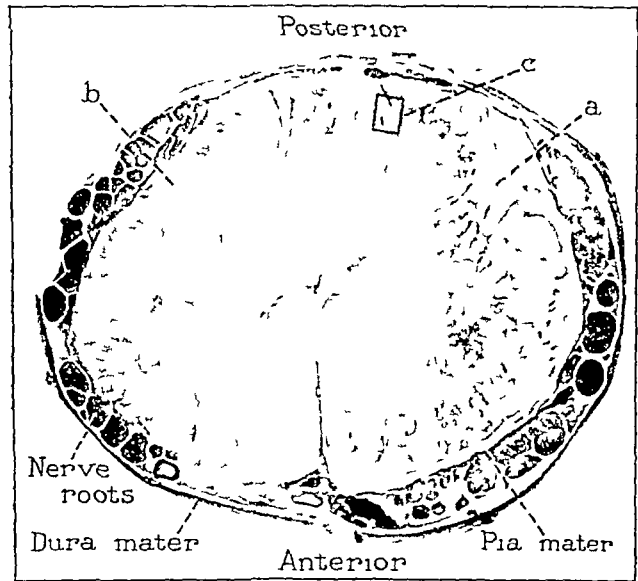


Fig 1—Cross section of the lumbar region of the spinal cord. The subpial zone on the right *a* shows marked destruction of the myelin sheaths; on the left *b* the myelin retains its normal staining qualities. Only the periphery shows the myelin degeneration; the center of the spinal cord is intact. The nerve roots on either side are normal. (Weigert myelin sheath stain)

sure of the fluid might be the significant factor. To that end a solution of dextrose isotonic with 25 per cent solution of procaine was used. This required a 40 per cent solution. Injection of 5 cc of this solution

TABLE 2—Control Protocols

Dog	Weight kg	Solution Injected	Comment
21	26.0	10 cc physio logic sodium chloride	Animal not injured in any way
22	15.5	6 cc physio logic sodium chloride	Animal in good condition soon after injection; no permanent effects
23	23.0	5 cc of 40 per cent dextrose	Animal gave signs of discomfort for 37 minutes; became quiet soon afterward and was in good condition within an hour; no permanent effects
24	20.2	5 cc of 40 per cent dextrose	Throughout period of observation which lasted 1 hour and 13 minutes animal in good condition
25	25.0	5 cc of 18.5 per cent urea	Animal in good condition the following day; urea caused slight anesthesia
26		No injection	Brain normal; medulla and cervical and upper thoracic portions of cord negative with Weigert's and hematoxylin and eosin stains

did not have a significant temporary effect and was without any permanent effect on the two dogs in which it was used

A similar experiment was carried out with a solution of urea (18.5 per cent), which was made isotonic with 25 per cent solution of procaine. As might have been expected the urea produced slight anesthesia for a short period, but there were no permanent effects

Comment—These experiments have shown rather conclusively that the concentration of procaine used in spinal anesthesia is quite as important as the total dose. Consequently, recommendations concerning the dose of



Fig 2—Normal dark staining myelin sheaths on the left. On the right almost complete destruction and loss of staining properties of the myelin. Numerous scavenger cells contain undigested or undegenerated fragments of myelin. In the intermediate zone are some swollen and disintegrated myelin sheaths. (Weigert myelin sheath stain, X 125)

changes in the cord are due to the contact effect of the drug on the myelin sheaths. This explanation is not

4 Spielmeier W. Veränderungen des Nervensystems nach Stovainanästhesie. München med Wchnschr 2:1629-1634 (Aug 4) 1908. Pseudosystemerkrankungen des Rückenmarkes nach Stovainanästhesie. Neurol Centralbl 28:69-80 (Jan 16) 1909.

entirely satisfactory in the case of our experiments, but we have nothing better to offer

HISTOLOGIC CHANGES

There were definite changes in the spinal cords of dogs of which the hind limbs became permanently paralyzed. These changes were constant in that they affected the periphery of the spinal cord and did not penetrate deeply into its substance, but they varied slightly in the depth to which they penetrated and the distance to which they extended toward the medulla oblongata. There was destruction of the myelin sheaths in the zone beneath the pia mater, in the posterior, lateral and anterior columns of the spinal cord. The myelin sheaths were swollen, nodular and fragmented, associated with the formation of large vacuoles, giving these portions of the spinal cord a spongy appearance. The axis cylinders were also swollen, nodular and fragmented. The degree of destruction of the myelin sheaths and axis cylinders depended, in part, on the survival period of the animal after the injection. The degeneration of the myelin sheaths was limited almost exclusively to the subpial zone, there were no degenerative changes in the ganglion cells. The pia mater and the arachnoid were not thickened, and there was no inflammation in the subarachnoid space. There were no polymorphonuclear leukocytes or lymphocytes in the substance of the spinal cord, but there were many scavenger cells in the zone of degeneration of myelin sheaths. The nerve roots, anterior and posterior, which were present in the subarachnoid space did not have any destruction of the myelin sheaths or axis cylinders but appeared normal. Yet these were subjected to the same pressure as the periphery of the spinal cord and were also completely surrounded by the solution of procaine. All the blood vessels in the subarachnoid space and in the spinal cord appeared to be quite normal, and no thrombosis or occlusion was present. There is no satisfactory anatomic or physical explanation of the destruction of myelin sheaths in the periphery of the spinal cord which at the same time will explain the fact that the nerve roots in the subarachnoid space escape a similar fate.

INFERENCES

The results obtained clinically with the method of spinal anesthesia used at the Mayo Clinic and those obtained in these experiments are strikingly similar in one respect. Clinically, it is obvious that a dose of procaine will produce different degrees and duration of anesthesia, depending somewhat on its dilution as it is injected into the spinal fluid. For example 3 cc of 5 per cent solution (150 mg) gives more profound and longer anesthesia than 5 cc of 3 per cent solution (150 mg). Experimentally, it became obvious that the results were constant with respect to so many cubic centimeters of a certain concentration of solution of procaine injected into an animal. Every animal that became permanently paralyzed died from four to ten days after injection of the anesthetic intraspinally, whereas none of the animals died that were not permanently paralyzed. In order to keep the paralyzed animals alive long enough for the lesion to be visible it was necessary to catheterize them, to tube feed them with milk and syrup and to nurse them carefully for days. Five cubic centimeters of 20 per cent solution or of solution of greater concentration caused permanent paralysis. Five cubic centimeters of 17.5 per cent solution or of solution of lesser concentration did not cause permanent paralysis. Also a small quantity

2.5 cc of 50 per cent solution, even, did not produce permanent paralysis, and 10 cc of 12.5 per cent did not produce permanent paralysis.

We have had one clinical case, that of a small man who was to be operated on for bilateral inguinal hernia, and 2 cc of 10 per cent solution of procaine (200 mg) was injected between the third and fourth lumbar vertebrae. On the following day the patient had some difficulty in moving his legs, was unable to void the urine, had to be catheterized, and had some abdominal distention. On the next day these effects had disappeared and except for these symptoms, which existed for twenty-four hours, convalescence was uneventful.

Since this experience we have avoided the use of solutions stronger than 7 or 8 per cent and commonly employ concentrations of 3, 4 or 5 per cent solution as it leaves the syringe.

The results here reported deal with spinal cords which there is every reason to believe were normal. It is desirable to know the effect of procaine on abnormal spinal cords because, throughout the literature, abnormality of the central nervous system is given as a contraindication to spinal anesthesia. A question has been raised as to the possibility of injury from the ordinary dose of procaine and also apothesine⁵ to a spinal cord in which there is already pathologic change. Judging from our experiments, it seems probable that when paralysis follows the use of ordinary doses of a spinal anesthetic agent, the spinal cord was previously diseased. If this hypothesis is correct, it would be difficult to determine, in a given case, that the spinal anesthetic had done more than precipitate the clinical symptoms that would have come on gradually at a later period, even if the spinal anesthetic had not been given.

ABSTRACT OF DISCUSSION

DR. HALE HAVEN, Chicago. My associates and I used in our animals concentrations of the agent comparable to those used in man. With the Marchi method from twenty to thirty days after injection we were able to see myelin changes somewhat similar to those described by the authors. In our experience these changes were likewise present in the nerve roots. In all cases at this time we were able to note passive changes in the ganglion cells of the gray matter similar to those seen in retrograde or so called Wallerian degeneration. We did not feel these degenerative changes were permanent, because they were absent or evident only to a slight degree in animals kept alive ninety days. In *in vitro* experiments with concentrations of procaine as low as 0.5 per cent in physiologic solution of sodium chloride the spinal cord showed peripheral neurolysis similar to that demonstrated by Weil, saponin and other neurotoxins being used and quite similar in their Weigert picture to the slides shown here. The most constant change observed and one which appeared permanent was a sterile inflammatory reaction of the meninges which in the older animals reached a state of fibrotic scarring. The change was so constant and so seemingly more pronounced in those receiving larger doses that I am at a loss in explaining the difference between the authors' results and ours. I should like to ask if they have any explanation if they observed their animals as long as three months and if the changes were still present. I should also like to know if they made any investigation of the condition of the ganglion cells of the gray matter with specific stains for Nissl granules. Because of the milder and more passive changes that we observed in the nerve roots in the ganglion cells it was our feeling that there had a myelolytic effect and that this was due to this myelolytic effect. I have come to a regard to

DR JAMES W. KEROHAN Rochester, Minn. There seems to be some diversity of opinion about the effects of procaine on the central nervous system. It must be remembered that the anatomy of the dog is different from that of man. In the dog, the dura mater and the arachnoid completely and closely surround the spinal cord, just as a rubber glove surrounds the finger and in that respect are quite different from the pia and dura mater around the spinal cord of human beings. Consequently, pressure alone may be of importance. It was on that basis that Dr. Essex used other solutions such as dextrose and urea, but found again that alone they had no effect on the cord. I would like to draw attention to the appearance of the spinal cord in which degeneration was limited to the periphery. The nerve roots, lying free in the subarachnoid space and completely surrounded by the procaine, were not affected by it. This was constant throughout the series, and there were no changes in the cells of the anterior horn. I feel that the procaine does not have any demonstrable or permanent effect directly on the normal myelin. These dogs died from about eight to twenty days after the anesthesia had been given and there was no inflammatory reaction, either in the nerve roots here or in the subarachnoid space. There was some reaction in the spinal cord, but this was the result and not the cause of the degeneration. Scavenger cells were present in large numbers. What would have happened at the end of three months I cannot say.

DR. HIRSH E. ESSEX Rochester, Minn. We are in accord with Dr. Haven. We think these lesions are due to the toxic action of the drug on the cord. We have ruled out the probability of their being due to a pressure phenomenon or to an osmotic action of the drug.

STRICTURE OF THE RECTUM

SOME OF ITS PROBLEMS

COLLIER F. MARTIN, M.D.
PHILADELPHIA

The study of stricture of the rectum is as fascinating as the treatment is discouraging. The etiology for the most part is unverified, the literature is confusing, and the compilation of statistics by various authors is not standardized. I had intended to classify stricture as to the apparent pathologic conditions such as syphilis, gonorrhea, tuberculosis or those following simple pyogenic infection. In looking over my statistics I found this to be absolutely impossible and was forced to look for some reason for this condition.

In my study I was confronted with the following questions:

1. Why should the occurrence be most usual between the ages of 20 and 40?
2. Why is the Negro race peculiarly susceptible?
3. What is the relationship of stricture to venereal diseases, namely, syphilis and gonorrhea, and to tuberculosis?
4. What importance can be attached to a history of pelvic inflammation or pelvic operation in the female?
5. Why does it occur most frequently in the female?

In a series of 227 cases tabulated by Dr. Harry E. Bacon from the records of the Graduate Hospital of the University of Pennsylvania, and the Philadelphia General Hospital, I note that only ten cases occurred before the age of 20, while 204 were noted between 21 and 50 (90 per cent). There was a marked decrease between 41 and 50, but after 50 there were only thirteen cases noted. Of the first ten cases, seven were known to be congenital, probably the other three may be included under this classification. After 50 years

of age there is a sudden drop from thirty-seven in the previous decade to six, four and three in the three succeeding ten year periods. I can interpret this to mean only that stricture appears most frequently during the period of marked sexual activity. The age incidence of the patients corresponds very closely with tables published by Rosser,¹ Buie² and Hayes.³

The marked reduction in number in the last years of life may be due to the fact that these patients rarely survive after the age of 50.

It is rather curious to note that 167 of our cases, or 81.6 per cent, occurred in the Negro race, and all these were females. There are still twenty-one cases in which the color was not mentioned, so that the percentage may be even greater. Rosser seems to think that the prevalence of stricture in the Negro race may be accounted for partly by the racial predisposition to develop massive inflammatory deposits, which tendency he named "fibroplastic diathesis." For many years the term 'negromata' has been used by us as best describing these peculiar tissue masses. Rosser also believes that the Negro is particularly susceptible to venereal infection, as the result of the social conditions under which he lives. It is unfortunate that there is no close check up in the tables as to how many of the females were Negro or white. Our own tables are incomplete in the same detail.

As far back as 1811, Copeland⁴ stated that there seemed to be some relationship between the formation of rectal stricture and venereal diseases and that the subject should be investigated. Since that time various authors have tried to classify stricture as being due to syphilis, gonorrhea or tuberculosis. It would seem to me that this classification is not practical, as frequently I see two or more of these diseases present in the same patient. It is much like accusing the patient of eating horsemeat because a saddle was found under the bed.

The foregoing summary convinced me that something was wrong with my point of view. Since February, we have tried to make a detailed study of fifteen cases of rectal strictures under treatment in the Graduate Hospital, and ten others made available through the courtesy of other institutions. All of the patients were Negro females, the youngest was 22 and the oldest 48. No stricture has been noted in the male in our service for two years, provided congenital stenosis and a few postoperative contractions at or near the anorectal line are excluded. These patients all had massive perirectal deposits of inflammatory tissue, with marked contraction of the lumen of the bowel and multiple rectal and perirectal infections, with fistulas involving the perianal area. Rectovaginal fistula was frequently noted, and two cases showed marked involvement of the vulva. Many of these patients gave a history of previous pelvic infection and pelvic operations, the exact character of which could not be ascertained. The more I studied these cases, the more I became convinced that there must be some specific cause for the peculiar pathologic condition encountered in the Negro race. It was suggested to me as a possibility that an infection which produced a condition named 'lymphogranuloma inguinale' (climatic bubo) might play a part in this picture. In 1913, Durand, Nicolas and Favre of Lyons demonstrated that climatic

¹ Rosser, Curtice. Rectal Pathology in the Negro. J. A. M. A. 84: 93 (Jan. 10) 1925. Clinical Variations in Negro Pathology. *ibid.* 87: 2084 (Dec. 18) 1926.
² Buie, L. A. Benign Strictures of the Rectum. J. A. M. A. 81: 1357 (Oct. 20) 1923.
³ Hayes, H. T. Stricture of the Rectum. Tr. Am. Proc. Soc. 1931.
⁴ Copeland, Thomas. Diseases of the Rectum and Anus. Philadelphia 1811.

bubo and lymphogranuloma inguinale were a single entity. Wolf and Sulzberger suggested the term "lymphopathia venereum" as a substitute in terminology to avoid confusing the condition with the granuloma inguinale, in which disease Donovan bodies are seen in sections of the tissue. In looking up the literature in the quarterly index, one is struck by the many titles of papers under the heading "lymphogranuloma." It is no wonder that the condition has been overlooked by us as proctologists, since the titles of practically all the papers seem to refer entirely to urology or dermatology.

Apparently this disease was noted first in the male Negro, as the term climatic bubo would indicate. It has been described as a small initial lesion on the penis which appears from six to thirty days after intercourse. The primary lesion is small, painless and frequently unnoticed by the patient. It is nonindurated and non-suppurating, with sharply defined edges. The inguinal glands are involved early, usually in from one to two weeks following the initial lesion. They become swollen and slightly tender. The overlying skin becomes reddened and later violaceous. The glands mass together, with hard areas interspersed with softening. The disease is chronic and after months and years heals with dense scar formation and retraction of tissue.

Sulzberger and Wise⁵ say that rectal lesions are the inevitable sequel. Remembering that the lesions described occur in the male, I doubt this sequence of events and feel that it would be hard to show anatomically how stricture of the rectum would follow infection of the penis and inguinal glands. When the picture is carried further and it is seen that the female is infected through sexual relationship, and that this infection enters the cervix and posterior vaginal wall, it may be believed that perirectal and extra-uterine infection of the lymph channels and vascular systems may take place.

While no specific cause of infection has been discovered, it is believed that the infection is probably due to a filtrable virus. In 1925, William Frei suggested a clinical test of this disease, procuring an antigen from pus removed from the broken down inguinal glands. This is a dermal test and is quite simple to apply. In testing my cases I had to rely on outside sources for specific antigens. My first supply was obtained through the kindness of Dr. Descum McKenney of Buffalo. Later, a generous quantity was received from Dr. H. F. DeWolf of Cleveland. A control antigen was made of macerated inguinal glands removed from presumably healthy patients who had been operated on for hernia.

A positive Frei reaction was obtained in twenty of the twenty-five cases certainly a far greater number of patients than we found to have syphilis, gonorrhea or tuberculosis. It is just possible that this is a type of infection peculiar to the Negro race, just as granuloma inguinale is rarely found in white persons. Parenthetically, it might be a subject for study whether or not lymphopathia venereum and granuloma inguinale are not the same disease or at least clearly related. A history of previous pelvic operations, instead of indicating that the stricture followed the operation, might indicate that the patients were operated on because they had distinct symptoms referred to the pelvis and adnexa.

For the relief of these great sufferers we have tried many expedients such as proctotomy with or without

dilation, external proctotomy, after the method of Jelks, carbon dioxide snow, and colostomy. Many of the patients have been benefited but none cured. It is my firm belief that for the prolongation of life most of these patients must sooner or later have a permanent colostomy performed. To my mind, this would be the operation of election. Systematic treatment, with local drainage of the collections of pus, are indicated at all times. We have not decided on any medication. Apparently there isn't anything known now.

It would be impossible to go into detail as to the symptoms, clinical course and treatment of these cases in the space allotted, but I feel that our few cases materially change the statistics of inflammatory rectal stricture. The following views are believed by me to be essentially correct. Much investigation is necessary before they can be verified. This will take considerable time, but I feel that this may be considered a preliminary report. These views may be tabulated as follows, any single one of which might make a subject for extensive research.

1 Inflammatory stricture of the rectum primarily is due to a specific infection, classified variously as lymphogranuloma inguinale, climatic bubo or, more appropriately, lymphopathia venereum.

2 It is a disease peculiar to the Negro, possibly because of some racial susceptibility.

3 In the female, the disease is expressed as a stricture, in the male the prominent features are a primary sore on the penis followed by an adenitis, which frequently suppurates.

4 Acute inflammatory symptoms are absent, except periodically, patients complaining little of acute pain.

5 The disease is slowly progressive, extending over periods of months or years, resulting in rather massive destruction of normal tissue.

6 To date, the disease may best be described as incurable and tends toward an inevitable fatal termination.

7 The condition is probably more widespread than one realizes and probably is very infectious, particularly to the Negro race.

8 In view of the seriousness of the complications following these infections, it certainly would seem that all cases should be reportable to attempt to lessen the spread of the condition.

9 Lymphopathia venereum, whether expressed as an adenitis in the male or as a rectal stricture in the female, well deserves the name given it of the fourth venereal disease and might well be placed near the top of the list in importance.

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ABSTRACT OF DISCUSSION

DR. CLYDE W. MORTER, Milwaukee: All must agree with Dr. Martin's opening statement. The study of stricture of the rectum is as fascinating as the treatment is discouraging. Is any one prepared to say that tuberculosis is the causative agent in stricture or that it has any connection with it except as a secondary infective factor? Reverse the hypothesis and assume that tuberculosis is the exciting factor—what then becomes of the part played by secondary infection? All have seen patients with acute gonorrhea of the rectum recover without stricture. Can it be said then that a stricture due solely to gonorrhea ever occurs? My belief is that stricture is the culmination of a series of unfortunate events that finally result in extensive narrowing of the lumen of the bowel and that the bowel itself is surrounded by a densely chronically active inflammatory mass. The chronic process is the result of a low grade mixed infection which enters the rectum by way of

⁵ Sulzberger, M. B. and Wise, Fred. Lymphopathia Venereum. A. M. A. 99: 1407 (Oct. 22) 1931.

effort at drainage. Dilatation by any method is unsuccessful as long as infection is present and is even capable of lighting up an infection in a dormant area. It is fully agreed that in the majority of intractable strictures a colostomy is not only advisable but a necessary procedure. Dr. Martin gives some interesting data in his series of cases with granuloma inguinale antigen reactions. Milwaukee has a relatively small Negro population. The records of Milwaukee County Hospital and Milwaukee County Hospital Dispensary brought out the interesting fact that only three cases of granuloma inguinale have been noted during the past six years. All have responded to treatment with antimony and potassium tartrate. I should like to ask Dr. Martin, if the idea that there is a specific test for granuloma inguinale is accepted, whether he thinks that by this means it will be possible to recognize lymphogranuloma early enough to institute treatment that will materially control its complications and duration. I should like to call attention to the recent report of Dr. Williamson and his collaborators in *THE JOURNAL* May 27, regarding the use of a newly recognized preparation, Fuadin."

DR. HERBERT T. HAYES, Houston, Texas. The predisposition to scar formation in the Negro was brought out by Dr. Rosser several years ago and he partially attributed the prevalence of stricture to this. I too hold this view. In all probability the few white people who develop strictures also have this scar-forming tendency. The various forms of ulceration that occur in the rectum from bacterial invasion begin its formation. Dr. Martin states that these cases are more frequent between the ages of 20 and 40, that is, during the most active sexual life. Strictures are more frequent in the female than in the male and are much more frequent in the colored female than the white. I believe that gonorrhea is the infection most often responsible. I have observed the formation of a stricture in cases of gonorrheal proctitis, in spite of all forms of treatment. The low percentage in the male is accounted for by the rarity of infections in the rectum. The Negro male has a higher percentage of urethral strictures and he has a gonorrheal urethritis more frequently. There are strictures resulting from various other infections. In regard to lymphogranuloma inguinale, the reports have been confusing. I do not believe enough data have been presented to ascertain whether it is a causative factor in rectal stricture. Some men are reporting a high percentage of positive Frei tests and others are not, however there is a high percentage of positive Wassermann tests in stricture, but that does not prove them to be syphilitic. The cases that I thought were definitely lymphogranuloma inguinale presented the characteristic swollen inguinal glands, discharging sinuses and elephantiasis of the vulva, anus and rectum. However, this is a new field of research and I hope that open-minded investigation will be fruitful of results. I agree with Dr. Martin that all forms of treatment, such as dilations, proctotomies, carbon dioxide snow and plastic operations, have proved to be only palliative measures and that these patients ultimately have to have a permanent colostomy.

DR. A. A. GOLDSMITH, Chicago. I should like to bring up the question of the possibility of dilatation of the strictures. I have had rather a small series compared to Dr. Martin. I have had two or three I could dilate rather efficiently. One was in a white man in whom it came on one year after an acute gonorrhea, at the time he was taking treatment for posterior urethritis. I have been able to keep the rectum open satisfactorily for several years. I see the patient once every two or three months and he has had no further trouble except some irritation. Another patient was a colored woman with marked stricture formation and it was possible to dilate her rectum. I agree that most of them cannot be dilated because of the tortuous channel about four inches long, which has many angles. In those two cases it was possible to dilate the stricture satisfactorily and I feel that these patients are better off now than they would be with a permanent colostomy.

DR. M. H. STREICHER, Chicago. At the University of Illinois we have had occasion through the cooperation of the dermatology department to obtain approximately nineteen cases of this type. In the group there were two white females and only one white male. There can be no question that not all the cases are venereal, gonorrheal or syphilitic. At the Cook County Hospital through the courtesy of Dr. Jaffe, I have had

the opportunity to study two postmortem cases, the only two on record in Chicago at present. They have been reported by the dermatologists before this time. A distinction is made pathologically from tuberculosis, namely, that in tuberculosis there is caseation while in lymphogranuloma inguinale there is suppuration. In all the cases that we have had, the Frei test has been positive. The cases, of course, were seen in the terminal stage.

DR. E. JAY CLEMENS, Los Angeles. I have maintained for fifteen years that rectal stricture is not a surgical disease. I have at present the carbon dioxide rectal stricture clinic of the Los Angeles County General Hospital. I handle certain of my problems as follows: Into the discharging sinuses I instill pure phenol (carbolic acid). The result is that most of these discharging sinuses close. Into the bowel I insufflate once in a week 4 liters of carbon dioxide gas under pressure of one tenth pound to the square inch. Because carbon dioxide is the most potent agent in combating saprogenic infection, the purulent sanguineous discharge from the rectum ceases. Carbon dioxide is absorbed from the rectum by the venous circulation and is carried to the lungs, producing there hyperventilation due to the excessive diffusion of gases. At the same time the excessive carbon dioxide in the body produces neutrality of the body fluids. In this way acidosis is lowered, the arthritis disappears, and the general health of the patient markedly improves. After the patient's general health has improved, the discharging sinuses have closed and the discharge from the rectum has become quiescent, I abstract enough heat with solid carbon dioxide to produce a profound edema of each cell of the remaining uncomplicated stricture. The consequence is that the hard, fibrous tissue changes to a soft, elastic state, and as the result the stricture opens.

DR. JOHN L. JELKS, Memphis, Tenn. In the South the cases are chiefly among Negroes. I have seen one white woman with this condition. Strictures of the anus should be classified properly first in contradistinction to those of the rectum, secondly, they should be classified scientifically on an etiologic and pathologic basis. There are amebic strictures, tuberculous strictures and strictures due to streptococcal infections and other conditions, but this is an entity. It is apparently a local and not a systemic condition. I want to suggest to those who are making special studies to examine their cases in every way before they begin treatment, for treatment may destroy the opportunity to learn much about the condition *per se*. In addition to antimony and potassium tartrate they might try a 20 per cent solution of copper sulphate and push it into the tissues with the electrical apparatus. Operation is not of any avail in these cases. Dilatation cannot be done. Colostomy is indicated first to get rid of the foul secretions, which occur in women in the proportion of about 95 per cent.

DR. COLLIER F. MARTIN, Philadelphia. I cannot answer these questions accurately, as my contacts with the cases have been too brief. Certain points have been stressed, principally the relationship to race and sex. All of the twenty-five cases reported were in women and all but one were colored. Ten out of the twenty-five gave a positive Wassermann reaction, twenty-one gave a history of a previous pelvic operation or a gynecologic history. A Frei test was recorded as negative in only two cases. One of these patients was colored and the other was a white patient in whom a lymphopathia was not suspected. The percentage of positive cases certainly is surprisingly large. I feel that Dr. Morter has the granuloma inguinale in mind and not the lymphogranuloma inguinale or lymphopathia venereum. Antimony and potassium tartrate is certainly fairly efficient in treatment of the former disease, but Dr. Descum McKenney tells me that he has had some encouraging results in the treatment of lymphopathia venereum. The new drug Fuadin, which may be given hypodermically and not intravenously as is antimony and potassium tartrate, seems to offer some advantages. This will be tried if a supply can be made available. The Graduate School of the University of Pennsylvania being located in an area populated principally by Negroes, offers a fertile field to obtain cases for study. Unfortunately it is rather hard to obtain a consecutive history from a member of this race and the recorded figures may present some inaccuracy. This work will be continued and further reports will be forthcoming.

PRODUCTION OF ESTRUS

RELATIONSHIP BETWEEN ACTIVE PRINCIPLES OF
THE PLACENTA AND PREGNANCY BLOOD
AND URINE AND THOSE OF THE
ANTERIOR PITUITARY

J B COLLIP, PH D, MD, HANS SELYE, MD
EVELYN M ANDERSON, MD
AND
D L THOMSON, PH D
MONTREAL

There are three distinct substances in the human placenta that are capable of producing estrus precociously when administered to immature rats or mice, the first is ether soluble, the second ether insoluble but alcohol soluble, the third alcohol insoluble. From the ether-soluble fraction Browne,¹ in our laboratory isolated an active principle in crystalline form, it proved to be identical with trihydroxy-estrin or theelol, whose most characteristic physiologic property is that, while highly active in immature intact rodents, it is relatively less active in adult or immature ovariectomized animals, possibly, as we have suggested, because in the presence of ovarian tissue it undergoes conversion into some more active modification such as ketohydroxy-estrin (theelin). The active principle of the second fraction has been termed emmenin in a previous report,² it displays the same characteristic property, and we believe it to be a compound of trihydroxy-estrin with some unknown substance that alters the solubility without greatly modifying the physiologic properties, it certainly requires the presence of ovarian tissue in order to display its full estrogenic activity, but it does not appear to stimulate the ovary and it has no marked action in male animals. The alcohol-insoluble fraction, however, does stimulate the ovaries, causing the precocious formation of ripe follicles and corpora lutea when injected into immature female rodents and hence secondarily giving rise to the phenomena of estrus. It is with this fraction that the present discussion is chiefly concerned.

There is no reason to doubt that this ovary-stimulating substance is identical with the ovary-stimulating substances which circulate in the blood and are copiously excreted in the urine during pregnancy in the human female and which are the basis of the Aschheim-Zondek and Friedman tests for pregnancy and their modifications. In fact, we have latterly used preparations from pregnancy urine in preference to placental preparations, and we firmly believe that the results are completely interchangeable. On the other hand, from the time of our first publications³ on this subject, we have always maintained that this substance is not identical with the ovary-stimulating substance present in the anterior lobe

of the pituitary itself, and we have referred to the substance obtained from placenta or pregnancy urine as the "anterior pituitary-like hormone," a description which has commended itself to several other workers in this field. At first our reasons for drawing this distinction were slight differences in the physiologic response of normal animals to these substances, and the fact that the methods which extracted this substance from the placenta yielded only inactive preparations when applied to the pituitary itself. Recently, however, we have been able to devise and complete crucial and convincing experiments to prove the point, by investigating the behavior of the anterior pituitary-like hormone in hypophysectomized animals.

Smith⁴ was the pioneer in the study of the consequences of hypophysectomy in the rat, he showed, among many other important results which we have been able to confirm and extend, that the ripening of follicles in the ovaries ceased promptly and completely the ovaries atrophied, and the animals became permanently anestrus. Almost normal structure and activity could be restored to the ovaries, however, by implanting fresh hypophyseal material intramuscularly, and we have found that this result can also be attained by the administration of suitable extracts. On the other hand, reports in the literature on the effect of treating hypo-

TABLE 1—Control Data Showing Effect of Varying Dosage of Anterior Pituitary-Like Hormone on the Weight of the Ovaries of 21 Day Old Normal Rats Treated for Five Days

A P L Daily	Number of Animals	Body Weight Gm	Weight of Ovaries Gm
40 units	7	36	0.06
30 units	2	45	0.045
20 units	2	41	0.036
10 units	2	40	0.033
5 units	7	43	0.033
2 units	5	46	0.027
1 unit	5	41	0.021
0.5 unit	4	42	0.010
0.25 unit	4	41	0.012

physectomized animals with the anterior pituitary-like hormone (or "prolan" or similar preparations) are conflicting, partly because the number of animals available for experimentation has always been small. One of us (H S) has been able, by a modification of Smith's operative procedure, to prepare a large number of hypophysectomized rats wherewith to study the question. Rats hypophysectomized before puberty are found to react to treatment with the anterior pituitary-like hormone, not as normal rats do with enlargement of the ovaries, ripening of follicles production of corpora lutea and secretion of estrin, but by a somewhat inconspicuous and unexpected histologic change in the ovaries: the cells of the theca become transformed into luteal cells while the granulosa cells are unaffected.

This discovery had previously been made by Noguchi,⁵ and it suffices to dispose of the claims both of those who hold that anterior pituitary-like hormone behaves in the hypophysectomized rat as in the normal rat and hence might well be identical with the hypophyseal hormone itself and of those who hold that the anterior pituitary-like hormone has no action in the hypophysectomized rat and hence may be regarded as a pituitary-stimulating rather than an ovary-stimulating substance. It thus appears that the usual action of the

From the Department of Biochemistry McGill University Faculty of Medicine.
Read before the Section on Pharmacology and Therapeutics at the Eighty Fourth Annual Session of the American Medical Association Milwaukee June 15 1933.
1 Browne J S L The Chemical and Physiological Properties of Crystalline Oestrogenic Hormones Canad J Research 8 180 (Feb) 1931.
2 Butenandt A and Browne J S L Vergleichende Untersuchungen von Theelol Emmenin und Follikelhormonhydrat Ztschr f Physiol Chem 216 49 1933 Collip J B Browne J S L and Thomson D L The Chemical Nature of Emmenin Endocrinology to be published.
3 Collip J B The Ovary Stimulating Hormone of the Placenta Canad M A J 22 212 (Feb) 1930.
4 Collip J B Further Observations on an Ovary Stimulating Hormone of the Placenta Canad M A J 22 61 (Jan) 1931.
5 D L Thomson D L McPhail M K The Anterior Pituitary Like Hormone of the Human (Feb) 1931.

4 Smith P F The Disinhibition Caused by Hypophysectomy and Their Repair J A M A 84 159 (Jan 15) 1925.
5 Noguchi Ko Ueber das Verhalten der Ovarien bei der Schwangerchaftscastration Jan J M S J Pharm 7 10 (Feb) 1931.

anterior pituitary-like hormone on the ovaries of the normal prepubertal rat or mouse (the Aschheim-Zondek reaction) is possible only because the hypophysis of the test animal is intact, and presumably because there circulates in the blood of the test animal a substance, originating in the pituitary, that is complementary to the anterior pituitary-like hormone and enables it to exert its full action on the ovary instead of merely producing thecal luteinization. In full confirmation of this view, it has been possible to show that small quantities of hypophyseal extracts, themselves possessed only of slight ovary-stimulating activity, are capable of acting in concert with the anterior pituitary-like hormone to produce ripe follicles and fresh corpora lutea, in short, the typical Aschheim-Zondek picture in the ovaries of hypophysectomized rats.

It is well known that when the anterior pituitary-like hormone and certain pituitary extracts are administered together to normal immature rats, the effect on the weight of the ovaries is much greater than when either is given alone, there is, in fact, a definite synergistic or complementary effect. Evans⁶ who first drew attention to this phenomenon, believed that it was the pituitary growth hormone which was concerned therein, but we have found decisive evidence against this theory, as Evans⁷ has also done. Nor is synergism with the anterior pituitary-like hormone displayed only by pituitary extracts of high gonad-stimulating potency, in fact, the substance responsible has not at present been identified with any of the known pituitary hormones. The very interesting question arises whether this substance, which enhances the action of the anterior pituitary-like hormone in the normal rat, is the same as the complementary substance required for the anterior pituitary-like hormone to exert its full effect in the hypophysectomized rat. At present this question cannot be decided, an affirmative answer appears to be

academic interest, the anterior pituitary-like hormone has proved its therapeutic value, especially in the treatment of certain types of uterine hemorrhage,⁸ and it seems entirely possible that its scope could be considerably extended by giving in combination with it sufficient amounts of a purified pituitary extract to exert a complementary effect in the sense discussed. This would, at least, be more economical than relying on the expensive pituitary material to provide the whole of the physiologic activity required.

TABLE 3—Similar Results as in Table 2

Bidally Doses of Ant Pit C ₁	Daily Doses of A P L	Number of Animals	Body Weight Gm	Weight of Ovaries Gm
1 cc		9	36	0.039
1/4 cc		6	31	0.019
1/8 cc		6	40	0.01
1/2 cc	40 units	4	31	0.035
1/4 cc	40 units	7	30	0.061
1/8 cc	40 units	6	32	0.042
1/16 cc	40 units	7	33	0.06
1/32 cc	40 units	7	44	0.039
1/4 cc	20 units	5	29	0.066
1/4 cc	20 units	4	37	0.044
1/4 cc	10 units	4	39	0.064
1/4 cc	5 units	10	47	0.06
1/4 cc	2 units	7	46	0.041
1/4 cc	1 unit	5	41	0.042
1/4 cc	0.5 unit	5	37	0.035
1/4 cc	0.25 unit	5	37	0.022
1/8 cc	1 unit	4	40	0.070
1/8 cc	0.5 unit	4	41	0.013
Bolted 30 minutes				
1 cc		4	33	0.04
1 cc	5 units	4	36	0.038
1 cc	40 units	4	26	0.073

It is by no means easy to correlate these discoveries with demonstrations, such as that recently offered by Hisaw,⁹ that the gonad-stimulating activity of the pituitary extracts themselves can be split into two fractions, one causing purely follicular development and the other acting in conjunction with the first to produce luteinization. Since these experiments are not carried out on hypophysectomized animals, they cannot be compared directly with our own, and at present no plausible unifying hypothesis presents itself. With regard to the alleged multiplicity of the anterior pituitary-like hormone, the situation is possibly clearer. As is well known, Zondek¹⁰ believes that the ovary-stimulating effect of pregnancy urine preparations is due to the combined action of a follicle-stimulating "prolan A" and a luteinizing "prolan B." None of the many workers, including ourselves, who have carried out far-reaching purification of this material, have seen any sign of separation of these effects, and indeed the only evidence for Zondek's theory is the existence in certain urines, not collected during pregnancy, of an ovary-stimulating substance which has a predominantly follicle-stimulating effect and which Zondek regards as "prolan A." Believing as we do that the anterior pituitary-like hormone of pregnancy urine is derived from the placenta and is not necessarily identical with any truly hypophyseal principle, we are forced to suppose that when substances of this nature appear in the urine in the absence of tissue of placental type they must have a different origin (presumably hypophyseal) and may possess different physiologic properties. The testing of

TABLE 2—Effect on Weight of the Ovaries of 21 Day Old Normal Rats Treated for Five Days with a Purified Anterior Pituitary Extract, Alone and in Combination with Anterior Pituitary-Like Hormone

Bidally Doses of Ant Pit C ₁	Daily Doses of A P L	Number of Animals	Body Weight Gm	Weight of Ovaries Gm
1/2 cc		4	38	0.021
1/4 cc		5	39	0.014
1/8 cc		5	43	0.012
1/16 cc		5	46	0.013
1/2 cc	40 units	4	36	0.153
1/4 cc	40 units	6	44	0.072
1/8 cc	40 units	6	44	0.046
1/16 cc	40 units	6	47	0.046
1/4 cc	20 units	6	46	0.065
1/4 cc	10 units	6	34	0.030
1/4 cc	5 units	6	44	0.039
1/4 cc	1 unit	6	50	0.034

reasonable a priori, and it may be said at least that the two types of activity are closely associated in their distribution in various types of pituitary extracts. The accompanying tables indicate the magnitude of the complementary effect of a pituitary fraction labeled C, on the action of the anterior pituitary-like hormone in the normal rat. This C fraction is devoid of growth-promoting power, it is, however, by no means pure even in a physiologic sense. The question is of more than

6 Evans H M Meyer Karl and Simpson Miriam E. Relation of Prolan to the Anterior Hypophyseal Hormones. *Am J Physiol* 100: 141 (March) 1932.

7 Evans H M Simpson Miriam E and Austin P R. The Hypophyseal Substance Giving Increased Gonadotropic Effects When Combined with Prolan. *J Exper Med* 57: 897 (June) 1933.

8 Campbell A D. Further Studies on the Anterior Pituitary Like Hormone. *Lancet* 2: 561 (Sept 10) 1932.

9 Fevold H L Hisaw F L Hellbaum A and Hertz R. Sex Hormones of the Anterior Lobe of the Hypophysis. Further Purification of a Follicular Stimulating Factor and the Physiological Effects on Immature Rats and Rabbits. *Am J Physiol* 104: 710 (June) 1933.

10 Zondek Bernhard. Die Hormone des Ovariums und des Hypophysenvorderlappens. Berlin Julius Springer 1931.

the so called prolactin A on the hypophysectomized rat may decide this question

A feature that soon becomes prominent in research in this field is the existence of quantitative species differences, Loeb¹¹ and Aron¹² in particular have done much service in revealing and emphasizing this fact. We¹³ were able to confirm their finding that the anterior pituitary-like hormone administered to young female guinea-pigs does not produce a typical Aschheim-Zondek effect but leads to thecal luteinization similar to that seen in hypophysectomized rats. Since it had been found that very young suckling rats also responded in this modified way to injections of the anterior pituitary-like hormone, a fact which we confidently interpret as due to the failure of the pituitary at this very early stage to supply sufficient complementary substance, we at first considered that the guinea-pig pituitary also failed to supply this substance in adequate amounts. But it may well be that the ovary of the guinea-pig is adjusted to a different balance of the two active principles and requires relatively a much larger amount of complementary substance than the rat ovary. This might explain Loeb's finding that implants of hypophyseal tissue from various species differ in their effect on the guinea-pig ovary. By far the nearest approach to an Aschheim-Zondek reaction is obtained when the donor species is also the guinea-pig, we may suppose then that the guinea-pig's pituitary contains abnormally large amounts, relatively at least, of the complementary substance and is adjusted to the particular needs of the guinea-pig's ovary. This again is of possible medical significance, since the work of Engle¹⁴ indicates that the primate ovary is in this respect more comparable to that of the guinea-pig than that of the rat. The situation may be compared to that which prevails with respect to the thyrotropic hormone, this is present in small amounts in the pituitary of the guinea-pig, which is very susceptible to the action of the substance, but is abundant in the pituitary of the relatively refractory rat.

TABLE 4—Effect on Weight of Ovaries of Hypophysectomized Prepubertal and Postpubertal Rats of a Purified Anterior Lobe Extract, Alone and in Combination with Anterior Pituitary-Like Hormone

Bidally Doses of Ant Pit C	Daily Doses of A P L	Number of Animals	Body Weight Gm	Weight of Ovaries Gm
$\frac{1}{4}$ cc.		3	43	0.013
$\frac{1}{4}$ cc.	10 units	4	40	0.041
	10 units	4	49	0.019
$\frac{1}{4}$ cc.		3	124	0.040
	40 units	2	127	0.036
$\frac{1}{4}$ cc.	40 units	2	120	0.074

It is tempting to suppose that the gonad-stimulating pituitary extracts contain as one active principle a substance physiologically similar to the anterior pituitary-like hormone, though probably not chemically identical with it, accompanied by one or more adjuvant or complementary substances. One might even facetiously refer to the "placenta-like" component of such pituitary

extracts, but it must be observed that this is by no means the only hypothesis for discussion and that, as we have already indicated, our present knowledge of gonad-stimulating pituitary extracts does not lend itself to treatment along these lines.

The experiments on which this paper is based have for the most part received preliminary publication¹⁵ and will shortly be described more fully elsewhere¹⁶. Our experience with hypophysectomized rats in this investigation encouraged us to use them as test animals

TABLE 5—Similar Effects as in Table 4*

Bidally Doses of Ant Pit C	Daily Doses of A P L	Number of Animals	Body Weight Gm	Weight of Ovaries Gm
$\frac{1}{4}$ cc.		4	39	0.019
$\frac{1}{4}$ cc.	10 units	5	38	0.044
	10 units	4	49	0.019
1 cc.		3	123	0.030
$\frac{1}{2}$ cc.		3	124	0.047
$\frac{1}{4}$ cc.		4	135	0.034
$\frac{1}{2}$ cc.	40 units	2	114	0.075
$\frac{1}{2}$ cc.	20 units	4	134	0.071
$\frac{1}{2}$ cc.	10 units	3	136	0.075
$\frac{1}{4}$ cc.	40 units	2	127	0.063
$\frac{1}{4}$ cc.	10 units	3	89	0.029
Bolled 35 minutes				
1 cc.		5	36	0.023
1 cc.	20 units	3	27	0.076

* The complementary and maturity effects of the pituitary extract still persist after boiling the extract as also shown in table 3.

for the biologic assay of fractions obtained in a chemical dissection of anterior pituitary extracts. In this way we¹⁷ obtained a preparation that restored growth in hypophysectomized rats and yet was free from effects on the thyroid gland or the gonads, even when tested in the highly sensitive immature dove¹⁸. From extracts from which the growth hormone had thus been removed we¹⁹ prepared a fraction that stimulates the thyroid gland, as judged by histologic studies in normal guinea-pigs and normal and hypophysectomized rats, or, more advantageously, by its effect in raising the basal metabolic rate of hypophysectomized rats, these preparations, however, are not wholly devoid of effect on the gonads and suprarenals. More recently, we²⁰ have been able to obtain a fraction containing the adrenotropic hormone but practically without effect on growth, thyroid or gonads, it permits increase of size and restoration of the normal histologic picture of the suprarenal cortex in hypophysectomized rats. We²¹

15 Collip J B, Selye Hans and Thomson D I. Gonad Stimulating Hormones in Hypophysectomized Animals. *Nature* London **131** 56 (Jan 14) 1933. Selye Hans and Collip J B. Production of Exclucively Thecal Luteinization and Continuous Estrus with Anterior Pituitary Like Hormone. *Proc. Soc. Exper. Biol. & Med.* **30** 647 (Feb) 1933. Collip J B, Selye Hans, Thomson D I and Williams J E. Replacement of Gonadotropic Action of Pituitary in the Hypophysectomized Rat. *Proc. Soc. Exper. Biol. & Med.* **30** 665 (Feb) 1933.

16 Collip J B, Selye Hans and Thomson D I. Beitrage zur Kenntnis der Physiologie des Gehirnanhangs. *Virchows Arch. f. path. Anat.* to be published. Selye Hans, Collip J B and Thomson D I. Effect of the Anterior Pituitary Like Hormone on the Ovary of the Hypophysectomized Rat. *Endocrinology* **17** 494 (Sept Oct) 1933.

17 Collip J B, Selye Hans and Thomson D I. Preparation of a Purified and Highly Potent Extract of Growth Hormone of Anterior Pituitary Lobe. *Proc. Soc. Exper. Biol. & Med.* **30** 544 (Jan) 1933.

18 Riddle O, Bates R W and Dykshorn S W. Preparation Identification and Assay of Prolactin. *Am. J. Physiol.* **105** 191 (July) 1933.

19 Anderson Evelyn M and Collip J B. Thyrotropic Hormone of Anterior Pituitary. *Proc. Soc. Exper. Biol. & Med.* **30** 689 (Feb) 1933.

20 Collip J B, Anderson Evelyn M and Thomson D I. Adrenotropic Hormone of the Anterior Pituitary Lobe. *Lancet* **2** 367 (Aug 12) 1933.

21 Selye Hans, Collip J B and Thomson D I. Anterior Pituitary and Lactation. Effect of Hypophysectomy on Lactation and Lactation. *Proc. Soc. Exper. Biol. & Med.* **30** 550 552 (Feb) 1933. Collip J B, Selye Hans and Thomson D I. Further Observations on the Effect of Hypophysectomy on Lactation. *Am. J. Physiol.* **105** 211 (April) 1933.

11 Loeb Leo. The Specificity in the Action of the Anterior Pituitary of Different Mammals as Well as of Urine of Pregnant Women on the Sex Organs and Thyroid Glands of Immature Female Guinea Pigs. *Endocrinology* **10** 129 (March April) 1932.

12 Aron Max. I hormone prehypophysaire excito-secreteur des glandes endocrines genitales. *Arch. d'anat. d'histol. et d'embryol.* **15** 237 1933.

13 Selye Hans, Collip J B and Thomson D I. Further Studies on the Production of Thecal Luteinization by Means of A P L. *Proc. Soc. Exper. Biol. & Med.* **30** 780 (March) 1933.

14 Engle E T. Differences in Response of Female Marmoset Monkey to Extracts of the Anterior Pituitary and of Human Pregnenolone. *Proc. Soc. Exper. Biol. & Med.* **30** 530 (Jan) 1933.

have also shown that lactation, unlike pregnancy cannot continue in the absence of the hypophysis and have recently been able to confirm this finding in experiments with hypophysectomized mice

SUMMARY

The anterior pituitary-like gonad-stimulating substance of the human placenta and of human pregnancy blood and urine causes merely thecal luteinization when administered to hypophysectomized immature rats to very young suckling rats or to guinea-pigs. Hence when in the normal rat it produces enlargement of follicles and formation of corpora lutea, it does so by virtue of the presence of a complementary substance produced by the pituitary of the test animal. The presence of this complementary substance in pituitary extracts has been demonstrated, it is suggested that it may be identical with the substance which enhances the action of the anterior pituitary-like hormone on the ovaries of normal rats.

ABSTRACT OF DISCUSSION

DR J. P. PRATT, Detroit. The presentation by Dr Collip and his co-workers emphasizes the difficulty that clinicians experience in applying the fruits of the laboratory to the solution of clinical problems. The experiments on hypophysectomized rats can hardly be duplicated in man. Therefore the results they have obtained are applicable to human problems only through the dangerous and inaccurate process of reasoning by analogy. When the anterior pituitary-like substance is injected in rats and mice corpora lutea are produced in the ovaries, but when injected in women no such reaction occurs. What response is elicited in the latter case is a subject of considerable interest. In approximately 100 human specimens examined after injection of the anterior pituitary-like substance I have seen only one that suggested corpora lutea stimulation. The observations do not show anatomic variations corresponding to the time in the menstrual cycle at which the injection was made, nor do they differ in proportion to the amount injected. Sometimes no reaction occurs in the ovary. If any change is characteristic, it is an increase in atretic follicles. Although only slight anatomic evidence of reaction to the anterior pituitary-like substance can be demonstrated in the human ovary, it is not without physiologic effect, for certain types of metrorrhagia are benefited or corrected by administration of the substance. In some instances the favorable response is obtained in a very short time after the injection. Perhaps the authors will explain the manner in which the reaction takes place.

DR HARRY BECKMAN, Milwaukee. I find the whole subject so confusing that to hear a paper is of very little assistance to me. I am grateful to the authors for the excellent slides, which from the teaching standpoint are very valuable.

DR J. B. COLLIP, Montreal. I thank Dr Pratt for his discussion of the paper. The answer to the question he raised as to the mechanism by which the anterior pituitary-like hormone has given excellent clinical results in certain cases of metrorrhagia and menorrhagia cannot be given as yet. I think that Dr Pratt is undertaking the problem in the correct way in that he is gradually collecting evidence by actual observation of the ovaries of patients who have been treated with so-called ovary-stimulating hormone extracts. I think that the point which we made in the paper about species difference is going to explain a lot of the difficulties. To illustrate this I may mention that a purified thyrotropic hormone fraction which we prepared had no maturity effect when tested on immature rats but produced a marked effect on the gonad of the young male dove when tested by Dr Riddle. If our conception of the bipartite nature of the maturity factor is correct it is possible that there may be considerable species difference in regard to gonad sensitivity to one or another part of the maturity complex or to varying mixtures of these.

EMBOLECTOMY OF THE PERIPHERAL ARTERIES

REPORT OF THREE CASES

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AND

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Removal of emboli from the peripheral arteries is still an infrequent operative procedure, especially when one considers that these vascular accidents are not uncommon, and the results of conservative management are usually followed by serious consequences. The first attempt was made by Sabanejew¹ in 1895, at which time he removed an embolus from the femoral artery but was unsuccessful. Following his example, many surgeons attempted the operation of embolectomy without avail until Lahey² in 1911 and Key³ in 1912 successfully removed emboli from the femoral artery.

A careful review of the literature revealed 131 reported cases of arteriotomy for emboli of the peripheral arteries. The various facts included in these articles will be considered in the discussion.⁴

REPORT OF CASES

CASE 1.—L. S., a woman, aged 42, who entered the Michael Reese Hospital, March 7, 1932, under the service of Dr. William Buchbinder. She had had rheumatic heart disease for many years, and for the past five weeks rapidly lost strength, had a continuous fever, and had gastro-intestinal upsets. On admission, the patient was acutely ill, cyanotic, and exhibited a moderate dyspnea. The lungs showed impaired resonance at both bases. The heart was enlarged to the right, and the apex was at the anterior axillary line. The rate was rapid and the rhythm showed an irregular irregularity. There were also a multiplicity of murmurs heard over the cardiac region. The legs were edematous and the liver was also enlarged.

March 12, at 6 p. m., the patient suddenly complained of severe pain, numbness and coldness in the right leg. The color was more or less ashen and no pulsation was felt in the dorsalis pedis artery. The pain continued through the night, and next morning with increasing evidence of impaired circulation of the extremity. At 3 p. m., when seen in consultation the diagnosis of popliteal embolus was confirmed and immediate operation advised.

Operation was performed under local anesthesia. An incision was made about 8 cm. in length in the right popliteal space and the popliteal artery was carefully exposed. There was a noticeable decrease in subcutaneous bleeding, and an absence of pulsation of the main artery. The field was kept saturated with sodium citrate solution during the entire operation. Small rubber constrictors were applied to the artery and an incision was made into the lumen of the vessel. No blood flowed from the vessel when the proximal constrictor was released, so that a small bore glass tube attached to a suction apparatus was inserted into the proximal part of the incised artery. After a few attempts with the suction, a small clot followed by several small particles of clot was withdrawn from the vessel. The blood soon rapidly flowed from the opening and the constrictors were again tightened. The opening in the artery was closed with a continuous vascular silk suture, so as to cause an approximation of the intimal layers. The

From the Surgical Department of the Michael Reese Hospital.
1 Sabanejew, *Zentralbl. f. Chir.* 42: 990 (Oct. 17) 1896, cited by Key. Einar. Ueber Embolectomie als Behandlungsmethode bei embolischen Zirkulationsstörungen der Extremitäten. *Acta chir. Scandinav.* 54: 339 (Jan.) 1922.

2 Lahey, Georges, quoted by Mosny and Dumont. *Bull. Acad. de med.* 66: 358 (Dec. 19) 1911.

3 Key, Einar. Ein Fall operierter Emboli der Arteria femoralis. *Wien. klin. Wchnschr.* 26: 936 (June 5) 1913.

4 The complete bibliography of these articles will appear in the authors' reprints.

temporary constrictors were then released, and the circulation was reestablished through the popliteal artery.

The patient left the operating room in good condition, with the leg definitely warmer and with less pain. There were frequent attacks of cramplike pain in the calf and foot muscles for several days, but at no time did the leg lose its color or become cold. The patient was up and about after several weeks, had regained sufficient strength to use crutches, and left the hospital, April 30, 1932. She remained in comparatively good health for an individual with a grave myocardial disease until several months later, when she had another cardiac decompensation, developed pneumonia and died.

CASE 2—F L, a woman, aged 27, was admitted to the hospital for the first time, Jan 29, 1932, at which time she had suffered from a right hemiplegia and dysarthria. The physical examination revealed, in addition, a serious cardiac decompensation, mitral stenosis and regurgitation, and auricular fibrillation. Her condition gradually improved, and she left the hospital with a more or less compensated heart and moderate return of motor function of the right side of the body.

The second admission was on Feb 6, 1933, in the service of Dr Solomon Strouse. At this time there were again symptoms referable to cardiac embarrassment and abdominal complaints of attacks of pain in the upper right quadrant, with nausea and vomiting.

The patient was acutely ill, with a temperature of 100.8, respirations 28, a pulse rate of 100, and an irregular irregularity of its rhythm. The heart was enlarged to both the right and the left. Systolic and presystolic murmurs were heard at the apex. The liver was palpable three fingerbreadths below the costal arch, with local tenderness in the region of the gallbladder. There was moderate paresis of the lower right extremity. The diagnosis at this time was similar to that on the previous discharge, with the additional possibility of an engrafted subacute bacterial endocarditis and gallbladder disease.

February 9, at 11:30 p. m., the patient complained of severe pain in her right arm, which soon became cold and clammy, she went into shock, and the right radial pulse could not be obtained. The blood pressure on the left arm was 100 systolic, 65 diastolic, but could not be obtained on the right arm. The oscillometric readings showed absence of oscillations in the entire right arm, while they were normally present in the left arm. The deep axillary pulse was felt in the right axillary space, but there was no palpable brachial or radial pulsation. The diagnosis of embolus to the right axillary artery was made. At operation two hours later, a large embolus was found occluding the right axillary artery, just proximal to the circumflex humerus branch. The embolus was removed readily and the artery sutured as described in case 1. The hand and arm immediately became warm and the pain decreased markedly. The following night slight oscillometric readings could be demonstrated in the right arm, and there was a faint pulsation in the right radial at the wrist. On the evening of February 10 the patient complained of severe pain in both legs. The left was definitely cooler than the right. There was no cyanosis, and no oscillometric readings could be obtained from either leg. The diagnosis was made of a riding embolus at the bifurcation of the aorta with more marked interference with the left common iliac than the right although both seemed definitely involved. Surgery seemed contraindicated because of the partial circulation and the inaccessible site of the embolus. The legs continued more or less warm although no deep pulsations of the femoral artery could be determined. By February 12 the pulsations in the right radial practically equaled those of the left. Likewise the oscillometric readings showed practically equal pulsation in both arms and forearms. The surface temperature and histamine test for collateral circulation (Dr Perlow) of both arms were practically equal and normal. The same test showed that the collateral circulation of both legs and thighs was adequate although no pulsations could be elicited in the deep vessels. February 17 at 6 a. m. after a very comfortable night she complained of pain and pressure in her head and suddenly became unconscious and died.

Autopsy was obtained, with the following anatomic diagnosis:

Recent surgical incision of right axillary region and right axillary artery with patent lumen and no evidence of secondary thrombus formation.
Acute verrucous endocarditis of the tricuspid valve.
Healed endocarditis of the mitral, aortic and tricuspid valves.
Stenosis of the mitral and aortic orifices and insufficiency of these valves.
Diastolic endocardial pocket, left ventricle.
Hypertrophy and dilatation of heart.
Mural thrombus in left auricle.
Embolus in aorta (iliac bifurcation) almost completely occluding the left common iliac artery.
Multiple infarcts in kidneys.
Pulmonary emphysema.
Slight pulmonary arteriosclerosis.
Chronic passive hyperemia of lungs, liver, spleen and kidneys.
Chronic cholecystitis and cholelithiasis.
Old caseous tuberculosis, right lower lobe.
Recent miliary tubercles of lung.

Permission was not obtained to examine the brain.

CASE 3—R S, a woman, aged 62, admitted to the hospital in the service of Dr Leon Bloch, Feb 23, 1933, complained chiefly of recurrent attacks of severe precordial pain with a sense of constriction about the chest and feeling of impending death. The temperature was 100.4, pulse 92, and respirations 18. The patient was somewhat debilitated and appeared moderately ill and cyanotic. The heart was enlarged and the tones were distant. The blood pressure was 130 systolic, 72 diastolic. The peripheral vessels were thickened and tortuous.

She had several attacks of angina while in the hospital, and on March 1 at 5 a. m. complained of severe pain in the right arm which soon became blanched and cold. The pulsations of the right brachial artery were readily demonstrable, but there was no radial pulsation. The oscillometric examination showed a normal response in the right arm but an entire lack of response in the right forearm. A diagnosis was made of an embolus in the right brachial artery at its bifurcation into the radial and ulnar arteries. Operation was started at 7:10 a. m., two hours and ten minutes after the onset. The right cubital fossa was infiltrated with a local anesthetic, the skin was incised and after careful dissection the lower end of the brachial artery was exposed and the embolic occlusion was encountered at the bifurcation. Very dramatically, each pulse wave coursed through the brachial artery and stopped abruptly at the site of embolic lodgment. The mouths of both the radial and ulnar arteries were filled by the embolus, which took the form of a Y. Small rubber constrictors were placed about the brachial, radial and ulnar arteries above and below the embolus. The field was kept saturated with sodium citrate solution. A longitudinal incision was made into the brachial artery and the embolus was extruded. The constrictors were removed for a short period so as to allow a free flow of blood, and then tightened again and the vessel closed by a continuous vascular silk suture. The constrictors were again released and the pulse wave immediately surged through the brachial artery down over both the ulnar and radial arteries so that the radial pulse was then easily felt. The pain immediately subsided and the arm became warm. The oscillometric examination after completion of the operation showed a normal response in the right forearm. The patient unfortunately developed a cerebral embolus March 6, which caused a left-sided hemiplegia and died three days later from bronchopneumonia. The right forearm remained in normal condition and would surely have recovered completely had the cerebral accident not occurred.

COMMENT

The sources of the emboli are usually cardiac in origin arising from thrombi either located on the valves as in vegetative endocarditis or as mural thrombi found in the left auricle associated with mitral stenosis or auricular fibrillation. Occasionally atheromatous ulcerations of the aorta with local mural thrombi may give rise to emboli. Other vascular lesions and operative procedures may serve as a similar source.

The subsequent course of the embolic phenomenon depends on certain underlying factors. The emboli usually lodge at the bifurcation of an artery or at the site of one of its branches. The embolus may occlude

the vessel entirely, or, as frequently occurs, the subsequent thrombus formation and vascular spasm bring about a complete cessation of the circulation through this segment of the vessel. The ultimate changes depend chiefly on the size of the artery, the completeness of the occlusion and, most important, the available collateral circulation. Gangrene is to be expected in most instances if the circulation is not reestablished.

The symptoms produced by the lodgment of the embolus are those of a sudden onset of severe pain in the extremity, associated with pallor, lowered temperature, decreased mobility, and a disappearance of the skin and tendon reflexes. The main vessel or vessels below the site of the impacted embolus show a complete absence of pulsation as demonstrated by palpation, and lack of response in the oscillometer when applied to the extremity at that point. The embolus can sometimes be felt along the course of the artery.

The direct diagnosis of peripheral embolic accidents is based on the presence of preexisting cardiovascular disease, with the onset of the foregoing symptoms, and the presence of physical manifestations already mentioned. This condition must be differentiated from venous and arterial thrombosis, Buerger's disease, intermittent claudication and Raynaud's disease. The differential diagnostic features will not be considered in this paper, as they are usually quite obvious.

The treatment should be surgical, if the main vessel involved is accessible, if seen early, especially before the onset of gangrene, and the collateral circulation seems obviously deficient to maintain life of the extremity.

Local anesthesia is the anesthetic of choice and may be used by either local or peripheral nerve block. The involved vessel is exposed in the region of the embolic occlusion and carefully separated from the surrounding tissues. Soft, small rubber constrictors are placed directly around the artery, above and below the embolus, and are gently tightened so as not to injure the vessel. A longitudinal incision is made in the artery, and the embolus removed with care. The field must be kept saturated with sodium citrate solution during the entire operative procedure. If the embolus has not been definitely located, suction may be used in the open vessel, as was found necessary in case 1. The proximal constrictor is then released, and the blood will at once flow from the artery, if the embolus has been removed. It is wise to remove only the proximal constrictor in order that any adherent clot may be washed out of the vessel and small particles not forced into the distal branches. The constrictors are again tightened and the vessel is closed with continuous vascular silk suture material, so that there is a fine line of eversion of the intima. Subsequent to this, the constrictors are finally removed, to determine the completeness of the hemostasis and the reestablishment of the circulation. The wound is then closed by layers.

PROGNOSIS

The prognosis is dependent on the interval between the onset of the attack and the time of operation. The success of this method of procedure decreases rapidly, with increasing period of time and is usually hopeless after ten or twelve hours. Further, the subsequent course is dependent on the available collateral circulation, the myocardial reserve, and the general condition of the patient.

SUMMARY AND CONCLUSIONS

In three cases of peripheral emboli treated by arteriotomy, the vessels involved were the popliteal,

axillary and brachial. The immediate results were very satisfactory, although two of the patients later developed fatal cerebral emboli. The first patient was able to be around, lived for several months and died from a subsequent cardiac decompensation and pneumonia.

The diagnosis is usually obvious especially after a careful analysis of the early symptoms and the physical conditions and by the use of the oscillometer, which demonstrates the presence and usually localizes the site of the vascular occlusion. Various vascular diseases and local thromboses must be excluded before the best treatment for each case is decided on. Operation should be performed under local anesthesia and as early as possible. The technic described was found quite satisfactory. The surgical treatment is usually successful if the period of time between the onset and the operation is under ten hours, although this is subject to individual variations. The development of gangrene usually necessitates amputation but is frequently fatal because the patient is already in a debilitated condition and the myocardial reserve is necessarily very low.

Key concluded that "An embolus, which causes circulatory disturbances of a threatening character in the upper or lower extremities, ought to be removed by arteriotomy unless there are contraindications. The operation should be done as soon as possible."

104 South Michigan Avenue

Clinical Notes, Suggestions and New Instruments

DERMATO-OPHTHALMITIS DUE TO THE EYELASH DYE LASH LURE

CLAUDE E. HARNER, M.D., LONG BEACH, CALIF.

Having observed the report by Greenbaum¹ of a case of dermatconjunctivitis due to Lash-Lure, I am prompted to report three cases that I have seen. One patient was poisoned four years ago with the same dye. In addition to the three cases here reported, another case was seen several years ago in consultation, but adequate notes were not kept, or have been lost, and this case is not reported.

In only one of my cases can the condition be styled merely dermatconjunctivitis, since the lesions involved the eyes in general, producing keratitis and uveitis, and I have classified them as dermat-ophthalmitis.

REPORT OF CASES

CASE 1—Miss E. N., aged 23, seen in 1929, had the eyelashes dyed about a week previously with Lash-Lure. The eyelids were markedly swollen, so that she could hardly open them. They were covered with many small watery blisters. There was marked chemosis of both the bulbar and palpebral conjunctivae. The corneas were difficult to see but apparently clear. The iris was normal. The pupils were small. There was marked photophobia.

Under treatment, the condition improved slowly. Ten days later a small abscess on the lid of the right eye near the inner canthus was incised. The lids were still quite thickened and the conjunctivae velvety. Vision was right, 6/6—1, left, 6/6. Improved by lenses, it was right 6/4, left, 6/4—1.

The patient was next seen April 2, 1933 after having had her eyelashes dyed at the same beauty parlor the day before. The same dye was used. Both eyes were completely swollen shut. There was marked chemosis of the conjunctivae. The corneas were clear. The iris was normal. I could not get the lids far enough apart to see the interior of the eyes. The following day they were worse, with more swelling of the lids and conjunctivae. The lower lids were pulled up under the upper lids and apparently scratching the corneas. A large

¹ Greenbaum, S. S. Dermatoconjunctivitis Due to Lash Lure and Eyelash and Eyebrow Dye. J. A. M. A. 101:363 (July 29) 1933.

amount of watery secretion, slightly filled with pus, was obtained on spreading the lids apart. The corneas of both eyes were infiltrated with a faint gray infiltration.

April 4, the patient was sent to the hospital with private nurses. They were advised to open the eyelids every few minutes to allow the escape of the irritating fluid. Other treatments were instituted, including atropinizing. After a very stormy course the patient was discharged from the hospital one week after entrance.

In the office, when examined with a slit lamp, it was seen that there was an infiltration of the superficial layers of the corneas and still some edema of the conjunctivae. At various times, abscesses on the edges of the lids appeared, and a chalazion developed necessitating opening and curettage.

The eyebrows had been treated with the dye also, and the same vesicular eruption and tremendous edema occurred in this region. The eyes did not return to normal until May 16, six weeks from the date of application of the dye. Vision at this time was: Without glasses right, 6/5, left, 6/5—2. With correction right, 6/4, left, 6/4—2.

During the patient's stay in the hospital a Wassermann test was made and was negative. She had a mild nephritis. The urine showed a few hyaline casts, acetone plus one, and slight reduction of sugar. The white count was 7,200, with 70 per cent polymorphonuclears.

An interesting sidelight on this case is that the patient is training herself to be a cosmetician and it has been necessary for her to discontinue using this dye on other people, since in handling it she gets an inflammation of the skin wherever it touches.

CASE 2—Mrs. E. C., aged 42, seen June 27, 1933, had her eyelashes and eyebrows dyed with Lash-Lure the previous day at 5 p. m. She immediately had great irritation of the eyes, which became worse until in the night the lids began to swell shut, and on this morning the right one was entirely swollen shut and the left nearly so. Lacrimation and photophobia were intense. The lids of both eyes were markedly swollen and edematous and had a crinkly red appearance. The conjunctivae were swollen and red, there was flocculent stringy material in both eyes. The corneas were clear. The pupils were normal.

The following day she was sent to the hospital. There was very little improvement from treatment, and there was some enlargement of the preauricular lymph glands. The corneas developed ulcers on the lower margins. They became more and more infiltrated. The lids at times, were better and again worse. Sterile milk was given intramuscularly and ethylmorphine hydrochloride was used. The eyes were thoroughly atropinized. Multiple abscesses on the lid margins developed. Typhoid vaccine (50,000,000 bacilli) was given intravenously twice at two day intervals. A Wassermann test was reported four plus. A history of venereal infection twenty-six years before was obtained.

The patient was permitted to leave the hospital July 10, two weeks after entrance. When last seen, August 11, the ulcers had entirely healed but had left fairly large leukomas especially on the right eye. Vision was right 6/60, left 6/750—3. Slit lamp examination of the right eye showed deposits of pigment on the anterior surface of the lens and also some on the posterior corneal endothelium. There was a small posterior synechia. There was no deposit on the lens of the left eye. The fundi of both eyes were apparently normal.

CASE 3—Mrs. H. E., aged 28, seen, July 29, 1933, had her eyelashes dyed with Lash-Lure three days before. The following morning she had marked inflammation, the eyes being swollen shut. She was under the care of a general physician until referred to me. The lids of both eyes were swollen. There was maceration of the integument of the lids. The corneas were clear. The iris was normal. The conjunctivae were markedly injected. There were marked lacrimation and photophobia. Under treatment the patient improved rapidly and from a telephone conversation with her I learned that the eyes were quite normal within a week.

COMMENT

One is impressed that there is a distinct allergic factor in the production of this condition. Patient 1 had two distinct severe reactions four years apart. Also she develops a localized

dermatitis when using the dye on other patrons of a beauty parlor in which she is employed.

Patient 2, although having a definite syphilitic infection, which may or may not have accentuated the severity of the symptoms, on close questioning admitted that she frequently had eczemas and skin irritations from the use of various cold creams and other cosmetics.

314 Security Building

SEVERE EYE SYMPTOMS DUE TO DYING THE EYELASHES

OLIVER P. BOURBON, M.D., LOS ANGELES

As dyeing the eyelashes is a new fad of beauty parlor patrons, I am reporting this case for the purpose of calling attention to its dangerous possibilities. I have seen but one similar report.¹

The dye used in this case has for its trade mark "L'arieuse" is called "Godefroy's French Coloring for Hair and Beard," and is manufactured by the Godefroy Manufacturing Company, St. Louis. The statement is made on the container that it is "compounded according to the French formula." It is also stated that "the dye is somewhat perishable and must be consumed within fifteen months from the date stamped below" the expiration date for this particular bottle being May 15, 1933. The dye was used in this case on July 8, 1933, almost two months after the expiration date which the manufacturers had marked on the bottle, but whether the age of the dye had anything to do with the ill effects produced is a matter of conjecture.

REPORT OF CASE

Miss D. P. consulted me, July 9, complaining that her eyes were much swollen, with aching and burning and some thick discharge but no severe pain. She had her eyelashes dyed early in the afternoon of the day before. She stated that the beauty parlor operator let some of the dye get into her eyes and that soon after returning home and within two or three hours after the treatment her eyes became swollen, red and watery.

Examination showed a marked edema of the lids of both eyes, the edema extending downward into the cheeks. There was much chemosis of the conjunctiva with a severe congestion and considerable stringy secretion. The cornea of each eye was clear. The edema, chemosis and congestion were of such a degree that the patient could barely find her way about. While no history of former attacks was given, she was exceedingly nervous and the possibility of a severe angioneurotic edema was considered. An ointment of phenacaine with epinephrine was prescribed and directions were given for applying hot moist compresses to the eyes.

The next day the right eye was better, but the left eye was much more edematous and the compresses were changed to ice cold moist compresses of a magnesium sulphate solution. Gradual improvement continued for one week when the patient returned with a severe exacerbation. The eye lids were now so edematous that it was impossible for her to open her eyes. The lids had to be forcibly separated in order to remove the stringy secretion. Hot compresses of a magnesium sulphate solution and 0.5 per cent zinc sulphate ointment were prescribed.

Recovery was uneventful, the edema and secretion gradually growing less, the congestion of the conjunctiva being the last to disappear. The patient was dismissed August 4.

COMMENT

The profuse stringy secretion was evidently due to an excessive mucoid secretion caused by the chemosis and irritation of the conjunctiva and was not due to infection.

Allergic sensitiveness, the chemical irritation and toxic effect of the dye and angioneurotic edema were all considered.

The severe edema and chemosis that appeared so shortly after the dye was used was strongly suggestive of an allergic sensitiveness to the dye.

The prolonged period of the attack, the severity of the congestion, the gradual subsidence of the edema and chemosis and the fact that the conjunctive symptoms were the last to disappear

¹ See J. Am. S. S. Derm. Soc. Trans. Dec. 1, 1931, p. 22.
Fuchs, J. L. E. J. Clin. Derm. 101, 1933 (July 22), 1933.

would indicate that while an allergic sensitiveness to the dye was a possible causative factor it was not the only cause of the severe reaction

The picture as a whole strongly indicated a combined chemical irritant and the absorption of material that had a pronounced local toxic effect

520 West Seventh Street

EYELASH DYE (LASH LURE) DERMATITIS WITH CONJUNCTIVITIS

R C JAMIESON M D DETROIT

The report by Greenbaum¹ of a case of dermatitis and conjunctivitis due to eyelash dye has prompted the addition of this case to those on record in which eyelash dye (in this case also Lash-Lure) was the excitant

The use of dyes on eyelids and eyebrows would seem to the public a simple and harmless procedure but to the dermatologist even the most trifling and apparently innocuous agents must be considered as a possible cause in searching for the etiology in mild chronic cases of dermatitis about the eyes face and neck in women. These cases are encountered more and more frequently, and each new cosmetic added to the already long list adds one more possible exciting agent

In Bab's² recent article he mentions a number of cosmetics and dyes used on eyelashes eyebrows or skin which are known to produce dermatitis and even conjunctivitis. Henna also which is frequently used to dye the eyebrows and eyelashes was the causative agent in six cases reported by him

The case reported here, of a woman aged 40 was similar in most respects to those already reported. Five days before examination by an ophthalmologist eyelash dye (Lash-Lure) had been applied. No preceding sensitization test had been made. Three days after the application the eyelids became red swollen and irritated. With the usual bland applications she improved during the next two weeks, but at the end of that time the eyelids and adjacent skin areas again developed an acute inflammation accompanied by conjunctivitis. The entire clinical picture at that time was one of dermatitis venenata, invading the eyelids, forehead, cheeks and conjunctivae. Sensitization tests proved negative to everything except Lash-Lure

During the next two months the course of the condition was that of acute dermatitis with conjunctivitis, improving and recurring at intervals, with no other possible source of irritation except the original excitant. Persistent protection of the skin and the application of bland and soothing preparations finally succeeded in establishing a cure

This case appears to have been unusually severe and the protracted course (three months) would indicate that all cases of this type are possibly serious, considering the long incapacitation and the possibility of corneal ulcer or other ophthalmic complications

1309 David Whitney Building

CORNEAL ULCERATION FOLLOWING USE OF LASH LURE

A W McCALLY M D A G FARMER M D AND L C LOOMIS M D
DAYTON OHIO

There has been much agitation recently against the unbridled use of harmful cosmetics, and many case reports have appeared demonstrating some of the consequences of this practice

We report a case in which a woman had her eyebrows and eyelashes dyed with a preparation called Lash-Lure, a product manufactured in Los Angeles by the Lash-Lure Research Laboratory, Inc. As the ingredients of the cosmetic were unknown and could not be learned from the local beautician who applied it an analysis was made by a competent chemist. He qualified his report by stating that the dye was one of the paraphenylenediamine group. No neutralizing antidote was known and no report of similar cases could be found in the literature as a guide to treatment at the time the patient came under observation. Since then a report of a somewhat similar case though apparently without such extensive involvement,

has been made by Greenbaum¹. Another material difference between Dr Greenbaum's case and the one now reported lay in the time of development of symptoms, being twelve days in his case and immediate and severe in the one now under discussion

REPORT OF CASE

A woman, aged 38, seen on the morning of May 18, 1933, stated that on the afternoon of May 17 she visited a local beauty parlor, where her eyebrows and eyelashes were "touched up." A certain soap, dye and other applications were used. Instead of a minor treatment, as she had expected she was amazed to find it quite an elaborate procedure accompanied by smarting and irritation of the eyes. She had never had a previous application of dyes of any kind, though she had occasionally visited the beauty parlor for other cosmetic treatments. Her eyes smarted and pruned severely on her way home. Within two hours the lids were completely swollen shut and she was unable to open them. The eyes became very red, accompanied by profuse lachrimation and photophobia. The pain increased accompanied by a severe itching, more marked in the right eye. Her nose felt 'stuffy and runny,' with symptoms of a cold. The skin of her face and brow felt greatly irritated. There was no history of previous eye trouble of any kind and no allergic history except that she had always had a 'tender skin'

On her arrival home she flushed her eyes with boric acid solution several times and instilled 10 per cent solution of mild silver protein and ointment of yellow mercuric oxide. She had a bad night and her eyes were worse the next morning

When the patient was first seen the morning after the application of the dye, there was a beginning edematous dermatitis of the face and forehead, marked edema of the lids marked chemosis with folds of conjunctiva protruding between the lid margins and severe conjunctival and ciliary congestion. The pupils were small and only slightly active to light, and the iris markings were somewhat blurred, the iris appearing edematous. There were two areas on the left cornea which showed denudation of the superficial layers while the right was stippled over its entire area. The fundi appeared normal through the somewhat hazy media. Vision was blurred, more so in the right eye, though objects could be distinguished. The temperature was normal. Treatment was entirely symptomatic consisting of flushings with boric acid solution cold applications, butyn drops and holocaine ointment for pain, acetylsalicylic acid for headache and emulsion of naphthene tartrate solution for the edema of the nasal mucous membranes

The beautician on being informed of the case visited the patient and applied milk compresses to the face and lids

May 19, the chemosis had markedly subsided but otherwise the condition had progressed unfavorably. The skin condition had become worse and was very irritating. The ocular condition had not subsided except for the chemosis. Posterior deposits were present on Descemet's membrane, both corneas were more hazy pain was more marked in the right eye, vision was much impaired and both globes were tender to palpation. Tension was not increased. The discharge had changed to a stringy exudate. An attempt to dilate the pupil was made at this time with homatropine and atropine. It was found that with difficulty, only incomplete dilatation could be obtained and there was a tendency to contract quickly. The fundi could not be seen. Irrigations, butyn and compresses were the only measures affording relief butyn affording complete relief of the pain in the eyes for varying periods. Rest could not be obtained by the usual sedatives. A dermatologist was called to care for the skin condition. Lassar's paste and starch compresses were prescribed with some symptomatic relief. Conditions remained about the same on the 20th. The patient was hospitalized on the 21st in order to secure full nursing care. The pupils were fairly well dilated at this time. In the evening the pain became more severe requiring frequent instillations of butyn. The pupils again became small both corneas very hazy and vision practically absent except for light perception. The anterior chambers were of average depth. Tension was difficult to estimate because of the edema present, but it seemed slightly increased

May 22 the pain was still severe, particularly in the left eye whereas the right had previously been the more painful. Ten

¹ Greenbaum S S. Dermatoconjunctivitis Due to Lash Lure an Eyelash and Eyebrow Dye. J A M A. 101: 363 (July 29) 1933
² Bab W. Dermat. Wchnschr. 59: 1041 (July 7) 1933

¹ Greenbaum S S. Dermatoconjunctivitis Due to Lash Lure an Eyelash and Eyebrow Dye. J A M A. 101: 363 (July 29) 1933

sion still seemed increased on palpation and paracentesis was considered. McLean tonometer readings, however, were normal in both eyes. Fifty per cent dextrose was given intravenously, and eye medication was restricted to sterile olive oil and atropine. This, however, was not well borne. Pain could not be relieved by codeine or morphine, the latter exciting the patient, and return to butyn was necessary. It was thought that the frequent use of butyn might be aggravating the ocular condition. Butyn and atropine ointment were used. Filaments appeared on the left cornea and there was a marked lessening of pain. That night the patient rested for five hours, the best relief she had had since the onset of her trouble. On the 23d, a large central ulcer appeared on each cornea. The ulcers were touched with tincture of iodine, and metaphen 1 5,000 was used. These were improved the next morning but on the evening of the 24th there were two more small ulcers on the right cornea below and one appearing on the left. These were curetted lightly and touched with tincture of iodine. Cultures showed *Staphylococcus citreus*. The following day the patient was resting better and had slept fairly well with chloral hydrate by rectum. The ulcer margins, however, seemed to be extending and it was decided to cauterize these with the actual cautery. On the 26th there were two more small new ulcers on the right cornea and one more on the left. All of these smaller fresh ulcers were thoroughly cauterized on this day. It was found that their bases were deeply situated. The large central ulcers were clean and apparently healing. They were not cauterized but their edges were threaded with silver nitrate, 1 per cent, to stimulate them. From this time there was a slow but steady improvement. The edema of the lids subsided considerably but their margins remained somewhat reddened. Ammoniated mercury ointment, 3 per cent, was applied to this region for a few days with some improvement. Vision was reduced to light perception because of the impaired media but the pain was very much less. The patient was, however, extremely nervous and restless and, though many sedatives were used, none were successful in procuring rest, which amounted to from fifteen minutes to two hours a night, accompanied by hallucinations. June 1, a suppurating chalazion was incised and drained and on that date she was moved from the hospital to bed rest at home.

The ulcers improved slowly with occasional applications of tincture of iodine, instillations of metaphen, 1 5,000, solution, atropine, and the use of hot applications. Later mercurochrome paste and trichloroacetic acid were occasionally applied. June 4, they were treated with the actual cautery.

June 5, a generalized bright red papular dermatitis began to appear on the body. This was thought to be due to atropine. Homatropine, supposedly less toxic, was substituted, as scopolamine was feared in this case and it was thought advisable to continue a mydriatic. The skin condition all the way through had been a major problem and no effective remedy had been found. The appearance of this new rash was very annoying.

The patient, however, seemed to be making some progress until June 10, when she began to develop severe pain lasting for an hour or so each morning about 5 o'clock and not relieved by butyn. The tension in both eyes began to increase and the ulcers which had been improving, began to retrogress, the edges and bases becoming necrotic. June 14 a bilateral paracentesis was done with a keratome in both lower corneal segments. Relief of the severe pain was obtained to a considerable degree but the corneal ulcers were not influenced, though both wounds were kept open for several days. The right cornea was apparently becoming necrotic though the left seemed to be improving slightly. June 18 a second paracentesis was done on the left corner which had closed. On the 20th there was a partial slough of the right corner, involving all but a zone about the limbus and extending to the deeper layers. This was followed by a staphyloma and a dense opacity with vascularization. Tension subsided in the right eye but persisted in the left although the wound was kept open as long as possible. June 25 a third paracentesis was done on the left eye. This also failed to improve the condition of the left cornea which sloughed like the right but over a smaller area.

The skin condition improved markedly about June 18 when potassium permanganate solution 1 5,000 in the form of compresses on the face and affected portions of the body was begun.

All eye medication was stopped at the same time except for irrigations with physiologic solution of sodium chloride or potassium permanganate, 1 5,000, solution. Owing, however, to the increase of ocular pain, the eye medication was resumed and consisted of homatropine and butyn. Skin patch tests were made with atropine, butyn and metaphen, but all were negative. Hordeola and furuncles played an annoying part in the case after several weeks. Foreign protein was used in courses throughout the acute illness. Routine urinalyses and blood examinations, including Wassermann and Kahn tests, were negative except for an occasional trace of albumin, a few pus cells, and slight lowering of hemoglobin and the red cell count.

The most marked feature in the pathologic changes in this case was the intense edema of all structures, particularly of the cornea, ciliary muscle and iris. This apparently interfered markedly with normal circulation. There was simply a disintegration of the corneal stroma. Hypopyon, ordinarily seen in the presence of such marked corneal changes due to bacterial invasion was absent.

At the present time the patient is in good physical condition, the skin is clear and the eyes are quiet, though there is still slight ciliary congestion. The right cornea has a large dense opacity, which will permanently obstruct vision, the left has a less dense opacity in the lower half and enough infiltration above to restrict vision to light perception, as in the right eye. We are, however, still hoping for enough clearing of the left cornea to permit some vision, perhaps with the aid of an optical iridectomy. The patient has displayed wonderful fortitude and is in remarkably good spirits. She is entering into a number of her usual social and household activities and is now considering the braille system. She is especially interested in doing all in her power to stop the use of harmful cosmetics and in preventing similar and other injuries happening to other women from the same cause.

Fidelity Medical Building

Council on Pharmacy and Chemistry

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
PAUL NICHOLAS LEECH Secretary

REPORTS OF THE COUNCIL

CALUMBA-AGAR AND RHEUM-AGAR (REIN-SCHILD CHEMICAL CO) NOT ACCEPTABLE FOR N N R

Calumba-Agar and Rheum-Agar stated to be agar 'impregnated' respectively with fluid extract of Calumba, N F and fluid extract of Rheum, U S P, were presented for consideration of the Council by Reinschild Chemical Company, New Rochelle, N Y.

On the label of Calumba-Agar occurs the statement "Each teaspoonful represents 2 C C (M 32) Fluid extractum Calumbae N F." On the label of Rheum-Agar occurs the statement "Each teaspoonful (weighing only 1 gram) represents 1 C C (M 16) fluid extractum rhei U S P." In the information submitted to the Council no evidence was given that these products contained the claimed amounts of calumba and of rheum. In the case of Calumba-Agar the product was stated to be prepared by impregnating 1000 Gm of agar with 2000 cc of Calumba U S P VIII. In the case of Rheum-Agar the product was stated to be prepared by impregnating 1000 Gm of agar with 1000 cc of Fluid Extract of Rheum U S P. Combinations of agar with other substances are hardly justified unless the administration of the combination possesses some distinct advantage over that of the separate ingredients. The Council's referee reported that he knew of no special advantage in administering rhubarb or calumba with agar yet he was inclined to recommend that these products be accepted since he could find no serious objection to their use. Being skeptical as to the accuracy of the quoted statements from the label the referee recommended that Calumba-Agar and Rheum-Agar be accepted provided (a) that the firm could submit satisfactory evidence

that each of these contains the full amount of active ingredient stated on the label, (b) that no special claims be made for the therapeutic value of either combination—in other words that no special claim for either should be made because it is administered with agar, and that the claims for Calumba Agar and Rheum-Agar do not exceed those allowable for calumba and for rhubarb, and (c) that the advertising be revised to omit reference to unaccepted articles. The Council adopted the referee's recommendation.

When informed of the action of the Council concerning these two preparations, the Reimschild Chemical Company wrote that it had submitted the method of manufacture from simple standard U S P and N F preparations, that these are so simple as to be considered *prima facie* evidence as to their composition, and that the Council has facilities for determining their potency and is at liberty to do so. As has been stated repeatedly, the burden of proof lies on the manufacturer.

It is not the business of the Council to test every preparation that is submitted to it. The Reimschild Chemical Company has not submitted satisfactory evidence that Calumba-Agar and Rheum-Agar contain the full amounts of active ingredients stated on the labels nor met the other conditions for acceptance of the products, the Council, therefore, declared these preparations unacceptable for New and Nonofficial Remedies.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary

DEAN'S EVAPORATED MILK—VITAMIN D ADDED (ADDED VITAMIN D CONCENTRATE PREPARED FROM COD LIVER OIL)—150 STEENBOCK VITAMIN D UNITS PER 145 OZ

Manufacturer—Dean Milk Company, Chicago

Description—Evaporated milk, the same as Dean's Quality Evaporated Milk (THE JOURNAL, Aug 6, 1932, p 477) with 150 Steenbock Vitamin D units (vitamin D concentrate prepared from cod liver oil) per 14½ ounces.

Preparation—A definite quantity of cod liver oil concentrate (Vitamin, National Oil Products Company) in vegetable oil solution, is introduced into the evaporated milk as it leaves the evaporating pans. The mixture is homogenized, cooled, thoroughly agitated and canned by the usual procedure.

Vitamins—The vitamin D concentrate and the vitamin D fortified milk are regularly tested biologically.

Claims of Manufacturer—For general cooking, baking and table uses and for infant feeding. The mixture of equal parts of the evaporated milk and water is not below the legal standard for whole milk. The curds formed in the stomach are smaller, softer and more readily digestible than those from raw or pasteurized milk.

KING ARTHUR FLOUR NEVER BLEACHED

Manufacturer—Sands Taylor & Wood Co., Boston

Description—A spring wheat 'short patent' flour, not bleached.

Manufacture—Selected spring wheat is cleaned, scoured and milled and chosen flour streams are blended by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210.

Claims of Manufacturer—Never bleached.

BEECH-NUT STRAINED CARROTS

(SLIGHTLY SEASONED WITH SALT)

Manufacturer—Beech-Nut Packing Company, Canajoharie, N. Y.

Description—Sieved carrots retaining in high degree the natural vitamin and mineral values, seasoned with salt.

Manufacture—The carrots are washed, and are scraped and trimmed by hand, are sliced, weighed into steam jacketed glass lined kettles containing mechanical agitators with a minimum amount of water and 0.5 per cent by weight (of the carrots and water) of salt is added. The air is exhausted the carrots are steam cooked until soft, then passed through two enclosed monel strainers containing an atmosphere of steam. Coarse material is discarded. The strained material in 'vacuum' in glass-lined kettles is brought to the desired consistency, flowed to holding tanks, heated to 70 C and automatically sealed in jars in 'vacuum,' which are heated to 115 C for one hour and cooled.

Analysis (submitted by manufacturer) —

	per cent
Moisture	91.7
Total solids	8.3
Ash	0.9
Salt (NaCl)	0.2
Fat (ether extract)	0.2
Protein (N × 6.25)	0.4
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	5.9

Calories—0.3 per gram, 9 per ounce.

Vitamins—The method of preparation efficiently protects the natural vitamin values.

Claims of Manufacturer—Especially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving. The natural mineral and vitamin values are efficiently retained.

INSTANT POSTUM

Manufacturer—Postum Company, Inc., New York

Description—Dried water extract of a blend of roasted wheat bran, whole wheat molasses and malted wheat flour.

Manufacture—The bran, malted wheat flour and molasses are roasted in a coffee roaster, the wheat is separately roasted. The two roasts are blended in proper proportions. The blended cereals are extracted with hot water, the extract is clarified by centrifugating, evaporated to dryness in 'vacuum,' crushed and automatically packed.

Analysis (submitted by manufacturer) —

	per cent
Moisture	2.8
Ash	5.3
Fat (ether extraction method)	0.0
Protein (N × 6.25)	6.6
Crude fiber	0.0
Carbohydrates (by difference)	82.3
Calcium (Ca)	0.15
Phosphorus (P)	0.86

Calories—3.6 per gram, 102 per ounce.

Claims of Manufacturer—For the preparation of table beverage with water or milk, instantly miscible. Contains no stimulating ingredient.

MCCORMICK'S BEE BRAND NUTMEG MCCORMICK'S BEE BRAND SELECT WHOLE NUTMEGS

Manufacturer—McCormick and Company, Inc., Baltimore

Description—Whole and ground nutmeg (dried seed of *Myristica fragrans* Houtt, deprived of its testa). The whole nutmeg is coated with lime.

Manufacture—The nutmeg or ripe seed of an evergreen tree cultivated in Singapore, Penang, Sumatra, Java and the West Indies is collected after falling to the ground. The husk and mace are removed, the nutmeg in the shell is dried on mats in the sun or with fire heat for from eight to ten days. The shells are broken and removed, the kernels or seeds are dipped in milk of lime for protection against insect attack. They are

assorted according to size, exported and packed whole or ground in cartons or tins at the packing plant

Analysis (submitted by manufacturer) —		per cent
Moisture		83
Total ash		21
Acid insoluble ash		0.04
Volatile ether extract		52
Nonvolatile ether extract		36.6
Protein (N \times 6.25)		67
Starch		19.7
Crude fiber		2.8
Carbohydrates other than crude fiber (by difference)		38.3

Claims of Manufacturer—Conforms to the respective United States Department of Agriculture standards

(a) DAY STAR BEST PATENT FLOUR
(BLEACHED)

(b) I H BEST PATENT FLOUR (BLEACHED)

(c) SPLIT SILK BEST FLOUR (BLEACHED)

(d) THUNDERBOLT HARD WHEAT FLOUR
(BLEACHED)

Manufacturer—The Ismert-Hincke Milling Company, Kansas City, Mo

Description—(a) and (b) Hard winter wheat patent flour, bleached

(c) Hard winter wheat "standard patent" flour, bleached

(d) Hard winter wheat "straight" flour, bleached

Manufacture—Selected wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18 1932 p 2210 Chosen flour streams for the patent flours and all the flour streams for the straight flour are blended and bleached with nitrogen trichloride ($\frac{3}{4}$ ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate ($\frac{1}{2}$ ounce per 196 pounds)

Claims of Manufacturer—For bread baking

VITAMIN D FORTIFIED PASTEURIZED MILK
(150 VITAMIN D UNITS PER QUART)
ADVERTISING OF SANITARY
FARM DAIRIES, INC

Distributor—Sanitary Farm Dairies, Inc, St Paul

Description—Advertising for bottled pasteurized grade A cow's milk fortified with vitamin D (vitamin D concentrate prepared from cod liver oil), contains 150 Steenbock vitamin D units per quart

Preparation—The milk complies with the analytic and bacteriologic requirements specified by the laws of the state of Minnesota and the city of St Paul and other municipalities in which it is distributed

See this section for Vitamin D Fortified Pasteurized Milk of W J Kennedy Dairy Company, Detroit, for description of fortification with vitamin D (THE JOURNAL, July 1 1933 p 34) The milk is pasteurized by the holding method (61 C for thirty-two minutes) and immediately cooled to 4 C and automatically bottled The bottles are cleaned with 100 parts of chlorine per million parts of water which is forced into the bottles by pressure pump, the bottles are allowed to drain in an inverted position The bottles are closed with a seal cap and a hood cap held in place by wire

Analysis (submitted by manufacturer) —		per cent
Moisture		87.2
Total solids		12.8
Ash		0.7
Fat		4.0
Protein (N \times 6.38)		2
Lactose (by difference)		4.0

Calories—0.7 per gram 20 per ounce

Vitamins—The vitamin D concentrate used in the preparation of this vitamin D milk and the fortified milk are regularly tested biologically at a biologic laboratory approved by the Department of Agriculture of the state of Minnesota Clinical investigation shows this vitamin D fortified milk to be a reliable antirachitic agent

Claims of Manufacturer—A vitamin D fortified antirachitic fortified milk having the natural flavor and food values of

standard pasteurized milk One quart is equivalent in vitamin D content to $2\frac{1}{2}$ teaspoonfuls of good grade cod liver oil (60 Steenbock vitamin D units per teaspoonful)

STOKELY'S FINEST PEAS AND CARROTS

Manufacturer—Stokely Brothers and Company, Inc, Louisville Ky

Description—Cooked, fresh, diced carrots and peas

Manufacture—The cooked carrots (washed, peeled, assorted and diced) and the peas (prepared essentially by the same procedure as described for Stokely's Lima Beans (THE JOURNAL, Oct 7, 1933, p 1155) are admixed in definite proportions by machine just before the blanching operation The mixture is filled into cans, covered with brine sealed, processed for a definite period at 115 C, and immediately cooled

Analysis (submitted by manufacturer) —		per cent
Moisture		88.7
Total solids		11.3
Ash		1.3
Sodium chloride (NaCl)		0.8
Fat (ether extract)		0.1
Protein (N \times 6.25)		2.3
Crude fiber		1.2
Carbohydrates other than crude fiber (by difference)		6.4

Calories—0.4 per gram, 11 per ounce

Vitamins—The method of preparation is considered efficient for protecting the natural vitamin content

Claims of Manufacturer—Packed in enamel lined cans within a few hours after picking Natural mineral and vitamin values are retained in high degree

CLAPP'S ORIGINAL BEEF BROTH
(SEASONED WITH SALT)

Manufacturer—Harold H Clapp, Inc, Rochester, N Y

Description—Cooked beef broth containing salt for seasoning

Manufacture—Government inspected and passed beef is cooked at 100 C for five hours in a dilute salt solution The beef broth formed is allowed to stand over night, is strained through gauze and is automatically packed and sealed under vacuum in glass jars, which are processed at 116 C for one hour

Analysis (submitted by manufacturer) —		per cent
Moisture		97.7
Total solids		2.3
Ash		1.1
Sodium chloride (NaCl)		1.0
Fat (ether extract)		0.0
Protein (N \times 6.25)		1.0
Crude fiber		0.0
Carbohydrates (by difference)		0.2

Calories—0.05 per gram 1 per ounce

Claims of Manufacturer—Specially designed for infant and invalid feeding

(a) GILSTER'S BEST FLOUR (PHOSPHATE
ADDED) (BLEACHED)

(b) GILSTER'S FEATHERLITE PLAIN FLOUR
(PHOSPHATE ADDED) (BLEACHED)

(c) GILSTER'S MOTHERS JOY PLAIN FLOUR
(PHOSPHATE ADDED) (BLEACHED)

Manufacturer—Gilster Milling Company Mill Steeleville Ill Office Chester Ill

Description—(a) Bleached soft winter wheat short patent flour containing 0.5 per cent added calcium acid phosphate

(b) and (c) Bleached soft winter wheat long patent flour containing approximately 0.5 per cent added calcium acid phosphate

Manufacture—Selected soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18 1932 p 2210 Chosen flour streams are blended, bleached with a mixture of calcium phosphate and benzoyl peroxide and with chlorine and admixed with 0.5 per cent by weight of calcium acid phosphate

Claims of Manufacturer—For biscuit, cake and pastry baking

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY NOVEMBER 11 1933

IRRADIATED ERGOSTEROL, VITAMIN D AND TOXISTEROL

The discovery that irradiation of many food materials with ultraviolet rays would induce antirachitic properties in these foods paved the way for a line of research that has proved extremely promising for the ultimate chemical characterization of vitamin D. When it was found that the curative potency resided in the unsaponifiable fraction of irradiated oils, attention was naturally directed to cholesterol. However, it was soon shown that a contaminant was responsible for the photochemical activation of supposedly pure cholesterol and that this substance was ergosterol. In the early enthusiasm over this observation, irradiated ergosterol was hailed as the antirachitic factor itself or at least as the provitamin D. This material was early shown to possess extraordinary therapeutic action in the prevention and cure of rickets, later it was also found to be toxic if used in very large doses.

Certain changes of a chemical and physical nature take place when ergosterol is exposed to light of short wavelength. The irradiated product has a different melting point, solubility and optical rotation, and the absorption spectrum shows a marked transformation accompanied at the extreme by the loss of all antirachitic potency. It appears that the photochemical change has produced a series of products. In the course of one of the successful efforts to crystallize vitamin D, Windaus and his co-workers at Gottingen have obtained a series of isomers of ergosterol, viz., lumisterol, vitamin D, and suprasterol I and II. Subsequently, Windaus, von Werder and Luttringhaus¹ demonstrated still another product, tachysterol, in the mixture of irradiation products of ergosterol. It does not possess antirachitic activity until irradiated further, but, in contrast to the other nonpotent components of the irradiation mixture, it is definitely toxic.

A recent report by Laquer and Linsert² describes the isolation of still another product from the mixture of

isomers produced by irradiating ergosterol, to which they give the name toxisterol. This is produced by further irradiation of vitamin D and possesses far more marked toxic properties. Whereas 0.025 microgram of vitamin D will initiate healing in the rachitic bone, as much as 5 micrograms of toxisterol is required. The maximum absorption by toxisterol occurs at about 250 millimicrons and, since ergosterol, after being irradiated until no antirachitic activity remains, also shows this point of maximum absorption, it appears likely that the newly discovered sterol may constitute a large part of the product of extreme irradiation of ergosterol.

The difficulty of making clean-cut chemical separations of the isomers of the sterols is well recognized. It is more than likely, therefore, that the antirachitic property of toxisterol is due to contamination with vitamin D. It is certain that, if the early observations on the toxicity of toxisterol are substantiated, there is at hand an explanation for the untoward effects produced by supertherapeutic doses of irradiated ergosterol. Indeed, Laquer and Linsert point out the advisability of making therapeutic preparations in the future from crystalline vitamin D rather than from irradiated ergosterol in order to avoid the toxic effects of certain of its isomers which are inevitably produced in the photochemical process.

THE CENTENARY OF THE DISCOVERY OF DIASTASE

The present year represents the centenary of the discovery of diastase, an incident of great importance for the biologic sciences and not without considerable significance for medicine. In 1830, Dubrunfaut prepared an extract of malt that converted starch into sugar just as since early in the nineteenth century strong acids were known to do. His paper was really the first account of the action of an enzyme in solution.¹ Three years later, in 1833, Payen and Persoz² precipitated by alcohol from such extracts a substance that could be dried and preserved and that had a powerful action on starch. This they called "diastase." The term has continued in use in France almost to the present time as synonymous for the substances more commonly designated today as enzymes. Of course, the production of sugar in the process of malting was known before 1833, but the modern scientific history of enzymes and their action really commences with the researches of Payen and Persoz on diastase.

Today, at a time when enzymes seem to be recognized to a greater extent than ever before as possible potent agents in the biologic process of disease as well as of health, it may seem worth while to recall a few of the steps that have led to the current interest in those

¹ Windhaus, A., von Werder, F. and Luttringhaus, A. *Ann. d. Chem.* **499**: 188, 1932.
² Laquer, F. and Linsert, O. *Klin. Wchnschr.* **12**: 73 (May 13) 1933.

¹ Some account of the fundamental facts here referred to will be found in Bayliss, W. M. *The Nature of Enzyme Action*. London: Longmans, Green & Co., 1911.
² Payen and Persoz. *Memoire sur la diastase et les principaux produits de ses reactions*. *Ann. de chimie et de physique* **53**: 73, 1933.

unusual specific biochemical catalysts that are termed enzymes. In the early period, as the number of recognized diastase-like products grew, they were designated in general as "ferments" on account of similarities in their activities to those of alcoholic fermentation. Presently substances of the diastase type were distinguished as "soluble" or "unorganized" ferments in contradistinction to living organisms, like yeast, to which the name "organized ferments" was then applied. The inevitable confusion led the Heidelberg physiologist Kuhne in 1878 to suggest a new name. The publication in which this first occurred is so rare, and so few students have actually read it, that we venture to repeat the interesting passage, in translation:

The latter designation [i.e., formed and unformed ferments] has not gained general acceptance, in that on the one hand it was objected that chemical bodies such as ptyalin and pepsin could not be called ferments, since the name was already given to yeast cells and other organisms (Brucke), while on the other hand it was said that yeast cells could not be called *ferments*, because then all organisms including man, would have to be so designated (Hoppe-Seyler). Without stopping to inquire further why the name excited so much opposition, I have taken the opportunity to suggest a new one, and I give the name *enzymes* to some of the better known substances, called by many "unformed ferments." This is not intended to imply any particular hypothesis, but it merely states that *εν ζυμη* (in yeast) something occurs that exerts this or that activity, which is considered to belong to the class called fermentative. The name is not, however, intended to be limited to the invertin of yeast, but it is intended to imply that more complex organisms, from which the enzymes, pepsin, trypsin, etc., can be obtained, are not so fundamentally different from the unicellular organisms as some people would have us believe.³

Thus by definition enzymes have become the catalysts produced by living organisms. The controversy as to whether an essential difference existed between organized and unorganized ferments was settled by Buchner in 1897. He proved that by the application of great pressure to ground up yeast it was possible to express a liquid that contained no cells but possessed all the fermentative properties of the original yeast. Since that time, by similar means, many of the "ferments" have been extracted from living cells, and it has been amply demonstrated that, although these ferments are produced by the living cells, once they have been produced life itself is unnecessary for their actions. Cameron⁴ has further pointed out that all these compounds are therefore of one class and may be called ferments or enzymes. Neither term is satisfactory. Most of them do not produce an effervescence resembling boiling and the vast majority of them do not occur in yeast. They produce catalytic actions and therefore they may be more correctly termed biochemical catalysts or biocatalysts. In any event an enzyme, ferment or biochemical catalyst is a catalyst produced by a living cell but whose action is independent of the living cell that produces it. Paven and Percz could scarcely have imagined that within a cen-

tury hundreds of volumes would be devoted to the category of substances of which their newly described diastase was the first more clearly defined representative.

OHIO AGAIN ACTS TO AID ITS HOSPITALS

The increasing toll of motor vehicle accidents continues to place an unwarranted burden on hospitals. As previously mentioned in these columns,¹ hospitals receive compensation for only a small portion of the expense they incur in caring for patients who have been injured in accidents from this cause. These are not patients of the hospitals' choosing. If an injured person is brought to a hospital, the institution has no alternative but to accept him, regardless of how great an expense may be incurred in treating him or of how unlikely it may be that the patient or any other person will pay the costs of the required service. With the considerable losses of income from private patients and from endowment investments which most hospitals have suffered in the last few years, this burden of serving without adequate remuneration the casualties of motor transportation has been the more keenly felt.

Some attempts have been made in several states to remedy this situation. It was thought that the Massachusetts law compelling all owners of motor vehicles to carry liability insurance might greatly relieve the hospitals of that commonwealth, but such has not been the case. The legislatures of several other states following the leadership of New Jersey, have enacted lien laws which provide the machinery by means of which physicians, nurses and hospitals may secure payment of their legitimate charges for services rendered patients for injuries caused by the fault or negligence of other persons. These lien laws are good as far as they go but at best their operation is cumbersome, and, as far as motor vehicle accidents are concerned they leave uncovered all those cases in which responsibility for the accident cannot be placed on the owner of the car who is assumed by the patient to be responsible for the accident. Accidents in which responsibility cannot be fixed form no small percentage of all those with which hospitals have to deal.

The Ohio Hospital Association deserves great praise for its efforts exerted over several years to secure the enactment of a law framed in an attempt to solve this problem. That organization already had to its credit a law which has been in effect for several years which provides adequate compensation for the hospital care of workmen injured in industrial accidents. As a result the hospitals of Ohio are assured remuneration in such cases equalling or closely approximating their costs. Using some features of this law as a pattern the Ohio general assembly at its last session passed an act to provide reimbursement for hospitals on account of

³ Kuhne, W. Erfahrungen und Bemerkungen ueber Enzyme und Fermente. Unter a. d. physiol. Inst. d. Univ. Heidelberg I 291 126

⁴ Cameron, A. T. A Textbook of Biochemistry. New York, Mac

¹ J. Caring for the Victims of Automobile Accidents. Editorial J. A. M. A. 99:1175 (O) 1912

expenses for the care of indigent persons injured in motor vehicle accidents "

The main purposes of the law are, in effect, as follows. Indigent patients are defined as those persons who have suffered motor vehicle injuries and are unable to pay in part or in full for the hospital service they obtained in relation to such injuries. Hospitals to comply under the act must be organized and operated not for profit. The per diem cost for caring for patients is that determined by the Industrial Accident Commission and used as a basis of compensating them for the care of the victims of industrial accidents. The fund that is established to meet these hospital costs is derived from the annual license tax assessed against the owners of all motor vehicles registered in the state. The law was passed in June, 1933, and is to be in full force and effect until March 1, 1935.

The effect of this legislation is that hospitals may secure from state funds remuneration for the care of all victims of motor accidents who are unable to pay for the hospital care they receive or for whose injured condition no other person who can pay is responsible. Under its provisions, however, a hospital is left with the problem of collecting, if it can, in those cases in which responsibility for a motor accident lies with a vehicle owner who is financially able to pay the hospital or who has insurance protection. In case settlement is made with the injured person by the car owner or his insurance carrier, this law provides the hospital no redress. But it goes a long way toward taking the burden of caring for poor persons who have been injured in motor vehicle accidents off the shoulders of hospitals, where it does not belong, and placing it on the broad back of the whole group of motor vehicle owners.

Current Comment

WHAT PRICE EYES?

On other pages of this issue are reported six more cases of serious injury, one of them involving loss of sight, suffered by women who permitted beauty parlors to dye their eyelashes. In five of the six cases reported in this issue the serious effects were due to a product called "Lash-Lure." The Bureau of Investigation Department of THE JOURNAL published on September 23, this year, reports of seven additional cases, and the bureau now has in its files reports of four more. In other words, there have been sixteen cases of severe untoward effects reported following the use of a single product, Lash-Lure. This preparation is an aniline dye having for its base probably either paraphenylenediamine or paratoluylenediamine or some closely related substance. Every physician, and practically every responsible beauty parlor, knows the risk that is run in the application of dyes of the aniline type to the hair of the scalp. It has long been good beauty parlor practice to insist that persons who are to be subjected to

an aniline hair dye should be tested for sensitivity to that product. Because of the irritating effects of such dyes, there is no justification for the use of so dangerous a substance around the delicate tissues of the eye. As THE JOURNAL has pointed out repeatedly, cosmetics are under no national control. The National Food and Drugs Act defines a drug as a substance that is used for the prevention, mitigation or cure of disease, so that no matter how powerful, how poisonous or how deadly the drugs may be that enter into certain cosmetics, they are not drugs within the meaning of the act. As a result, the cosmetic industry is as free from legal restrictions of a national character in 1933 as the "patent medicine" industry was in 1905. Incidentally, it speaks well for the high character of the cosmetic industry generally in the United States that there is not more fraud connected with the business than there is. The Lash-Lure tragedies emphasize the need of some sort of national control over the sale of cosmetics.

THE EXCRETION OF SALICYLIC ACID

Although salicylic acid, employed in the form of salicylates, has long enjoyed an extensive use in clinical medicine its fate in the body has not been completely explained. Unlike some of the simpler organic acids, such as citric acid, malic acid and the fatty acids, salicylic acid is not burned up in the body. Much of the compound finds its way unchanged out of the organism by way of the kidneys. In part the ingested salicylic acid is subject to the apparent detoxicating mechanisms of the body, which are manifold.¹ Besides destruction by oxidation there may result several types of conjugation to render a somewhat toxic substance less harmful. Hydroxy compounds, either aliphatic or aromatic, are usually detoxicated by conjugation with sulphuric acid and excreted as ethereal sulphate, or, in case the supply of sulphuric acid is insufficient, glycuronic acid may take the place of the sulphate. Sherwin² has raised the question anew as to whether sulphuric acid conjugation or glycuronic acid conjugation enjoys predominance. Glutamine has been found as a detoxicating agent in man. Perhaps the most familiar mechanism is that by which the familiar amino acid glycine (glycocoll) is combined with benzoic acid to form the less offensive urinary constituent hippuric acid. Long ago it was reported that intake of salicylic acid is followed by the formation and excretion of a compound consisting of glycine and salicylic acid. It was named salicyluric acid in 1856 by Bertagnini³ because of its analogy to hippuric acid. Some investigators in more recent times have failed to find salicyluric acid and have therefore questioned its occurrence in human urine. According to the latest studies of Quick⁴ at the Fifth Avenue Hospital in New York, the human organism can synthesize salicyluric acid but the amount excreted is rather small. Quick believes that its importance has been overemphasized. He asserts that, contrary to the statement found in some

1 Sherwin C. P. *Physiol. Rev.* **2**, 238 (April) 1922.
2 Ambrose A. M. and Sherwin C. P. *Detoxication Mechanisms*
Ann. Rev. Biochem. **2**, 377 1933.
3 Bertagnini C. *Ann. Chem.* **97**, 248 1856.
4 Quick A. J. *J. Biol. Chem.* **101**, 475 (July) 1933.

of the textbooks on pharmacology, the excretion of salicylic acid is not rapid. For example, whereas the excretion of hippuric acid following an intake of 2 Gm of benzoic acid is complete in four hours, the elimination of salicylic acid is only 50 per cent complete in twenty-four hours. The rate of salicylic acid excretion is dependent on the concentration of the drug in the body. With increasing doses of salicylic acid, the excretion of the free acid becomes definitely greater, while the output of salicyluric acid is only slightly affected. The stimulatory effect of salicylic acid on uric acid excretion appears, according to Quick, to depend on a fixed concentration of the drug in the body. Below this crucial concentration no effect is observed. The action of salicylic acid on uric acid elimination is strikingly augmented by glycine or foods such as gelatin that are rich in glycine.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8:55 to 9 o'clock, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

November 14 White Flour and Bleached Flour
November 16 Oyster Season Here Again

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

November 18 Itching

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

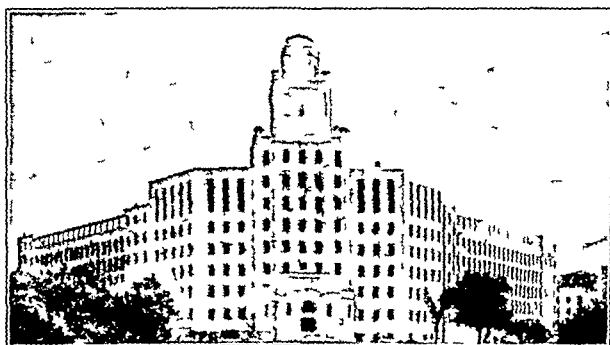
University News—Dr. Luther L. Hill, Montgomery, gave the annual address commemorating the seventy-ninth birthday of William Crawford Gorgas before the Lafayette Guild Chapter of the Gorgas Medical Society, University of Alabama, October 3, his subject was 'Medical History.'

Society News—Dr. Charles O. King, Birmingham, addressed the Walker County Medical Society, September 8 on diagnosis of skin diseases of interest to the general practitioner.—Dr. Duane M. Carr, Ann Arbor, Mich., addressed physicians of the Tennessee Valley in Decatur, September 20, on 'Surgery of the Chest.'

ARKANSAS

New Government Hospital at Hot Springs—The new Army-Navy General Hospital, erected by the government in Hot Springs National Park at a cost of \$1,500,000, was opened to patients, September 20. The hospital said to be the tallest building in Arkansas will have a capacity of 412 beds as compared with 270 in the old hospital which it replaces. It is V-shaped with wings consisting of six floors and a heliotherapy deck while the central structure at the wing junction is twelve stories in front and six in the rear. On the first floor are the bath house with thirty immersion baths, three hydrotherapeutic towers and a hydrotherapeutic pool for paralytic patients, administrative offices, wards for women and children and isolation and detention wards. The second floor contains dental

offices with X-ray apparatus and laboratory, electrocardiograph, two large wards and twelve private and semiprivate wards. Facilities for the eye, ear, nose and throat and medical service with two typical wards and the main kitchen, food preparation and refrigeration rooms are on the third floor. Wards are on the fourth floor, and the genito-urinary service, hospital laboratory and two typical wards on the fifth floor. On the sixth floor, center, is the surgical service including orthopedic surgery and two large heliotherapy decks, while the seventh floor tower contains an X-ray clinic with two radiography rooms and one room each for fluoroscopy, roentgen therapy, film storage, dark room and viewing room. The physical therapy department is also on this floor. The eighth tower floor has private and semiprivate wards. Mineral water is supplied to drinking fountains on each floor of the building and to all bath equipment. The structure is of reinforced concrete.



New government hospital at Hot Springs

veneered with a light color face brick, trimmed with limestone and terra cotta, and embellished with ornamental aluminum and bronze. The Army-Navy General Hospital was established in 1883.

CALIFORNIA

Changes in Health Officers—Dr. Samuel G. Arnold has been named health officer of Long Beach, succeeding Dr. Grundy E. McDonald. The Kern County Health Department, of which Dr. Joseph K. Smith, Bakersfield, is the health officer, has taken over the health work of the city of Tehachapi. Dr. Rupert G. Doupe was formerly city health officer. Dr. Frank G. Crandall, district health officer of Whittier district, Los Angeles County, has been transferred to Santa Monica in a similar capacity. His new territory includes Santa Monica, Culver City, West Hollywood and the mountainous districts to the north.

Alumni Day—The University of California Medical School, San Francisco, will observe its semiannual alumni day, November 24. In addition to operative clinics, ward rounds and demonstrations the following papers will be presented:

Drs. James F. Rinehart and Stacy R. Vetter, 'Studies on the Etiology of Rheumatic Fever';
Dr. William I. Kerr, 'Etiology of the Common Cold';
Dr. William C. Deamer, 'Interesting Studies on Allergy';
Chauncey D. Leake, Ph.D., 'Development of Ideal Anesthesia';
Dr. John Homer Woolsey, 'What a Medical Center Can Mean to the Man in Practice.'

The annual Alpha Omega Alpha Lecture will also be given.

CONNECTICUT

Dr. McCollum to Lecture on Nutrition—Elmer A. McCollum, Ph.D., professor of biochemistry since 1917, Johns Hopkins University School of Hygiene and Public Health, Baltimore, will address a public meeting, November 16, in the Colonial Room of the Horace Bushnell Memorial, Hartford. The title of the lecture, offered under the auspices of the Connecticut Dairy and Food Council, will be 'Present Trends in Nutrition.'

GEORGIA

The Most Prevalent Diseases—Twenty-two per cent of the total number of cases in a group of twelve of the most prevalent diseases reported by physicians from their private patients were attributed to syphilis and gonorrhea in Georgia in 1932. There was a total of 23,347 cases of venereal disease when the number of clinic patients (13,848) was added to the number reported by physicians (9,499). Influenza led the list of the twelve most prevalent diseases in this group with a total of 15,085. Syphilis was second with 6,770. Others in order

were pneumonia, 4,252, malaria, 3,411, tuberculosis, 3,321, gonorrhea, 2,723, typhoid, 1,799, diphtheria, 1,362, whooping cough, 1,085, measles, 1,075, pellagra, 986, and scarlet fever, 802. The total number of cases in this classification was 43,277.

District Meetings—The Eighth District Medical Society was addressed at Valdosta, October 10, among others, by Drs. George E. Atwood, Jr., Waycross, on Laboratory and X-Ray Findings in Bronchospirorchetosis; Alton M. Johnson, Valdosta, 'Vomiting in Infancy'; George F. Eubanks, Jr., Atlanta, proctologic problems; Charles H. Richardson, Jr., Macon, diagnosis and management of diseases of the biliary tract; and Kenneth J. McCullough, Waycross, management of pelvic inflammatory disease. At a recent meeting of the Seventh District Medical Society in Cartersville, speakers included Drs. John L. Chandler, Rome, on Importance of Early and Regular Examinations of the Pregnant Woman; Zebulon V. Johnston, Calhoun, 'Diseases of the Uterus with Special Reference to Malignancies'; William H. Lewis, Rome, 'Significance of Pelvic Pain'; and August F. Routledge, Rome, 'Observations in the Treatment of Gonorrhea'. Speakers before the Ninth District Medical Society at a meeting near Jasper recently included Drs. Grady N. Coker, Canton, and Daniel C. Elkin, Atlanta, on 'Rare Findings in the Surgical Abdomen'; and 'Treatment of Aneurysm', respectively. Dr. Clarence L. Ayers, Toccoa, president-elect of the society, also spoke.

ILLINOIS

Typhoid Outbreak at Bluffs—One death and ten cases of typhoid were recently reported in Bluffs, a town of about 1,000 inhabitants. A preliminary investigation indicated that a milk supply was responsible but the observation of food and milk handlers is being maintained in an effort to determine definitely the source of the outbreak. Eight of the nine blood specimens examined proved positive for typhoid.

Society News—Dr. John J. McShane, Springfield, spoke before the Christian County Medical Society in Taylorville, October 23, on epidemic encephalitis and other contagious diseases of the nervous system. Speakers before the Ogle County Medical Society at Rochelle, October 26, included Drs. Charles D. Center, president-elect of the Illinois State Medical Society, and Thomas B. Knox, sixth district councilor both of Quincy, on 'The Need of Cohesion' and 'Medical Care of the Unemployed', respectively. Dr. Nathan S. Davis III, Chicago, discussed 'Hypertension—Coronary Disease' before the Peoria City Medical Society, November 7.

Chicago

Personal—Dr. Elwood W. Mason has been named instructor in medicine in the division of biological sciences, University of Chicago. Dr. Benjamin Goldberg, associate professor in medicine, University of Illinois College of Medicine, was given an honorary professorship in the National University of Mexico, October 30.

Program on Encephalitis—The recent outbreak of encephalitis in St. Louis will be discussed at a meeting of the Chicago Medical Society, November 22. The speakers will be Drs. Hugh S. Cumming, surgeon general, U. S. Public Health Service, Washington; D. C. Theodore C. Hempelmann, associate professor of clinical pediatrics, Washington University School of Medicine, St. Louis; and Noel Paul Hudson, professor of hygiene and bacteriology, University of Chicago.

Patients Wanted for Massive Radium Treatment of Tumors—The tumor clinic of Michael Reese Hospital is conducting a clinical investigation on massive radium therapy of a special group of neoplasms and will accept free of charge a limited group of indigent patients suffering from these conditions. The tumors under investigation are cancer of the tonsil, pharynx, larynx, and prostate, also benign prostatic hypertrophy occurring in patients in whom operation is contraindicated. It is essential that these patients should not have received any previous radiation treatment. It is requested that the referring physician submit data concerning a case before sending the patient.

INDIANA

State Medical Election—Dr. Walter J. Leach, New Albany, was named president-elect of the Indiana State Medical Association at its recent annual meeting in French Lick, to take office in 1935. Dr. Everett E. Padgett, Indianapolis, will assume the presidency of the association in January, 1934. Indianapolis was selected as the place for the next annual session.

Immunization Campaign—Two committees have been appointed to take charge of a campaign for immunization against diphtheria and smallpox, to be launched by the state advisory health council. Stanley Coulter, Sc.D., Lafayette, is chairman of one committee to prepare a bulletin on child nutrition and to encourage nutrition work in the public schools, and Dr. Thurman B. Rice, Indianapolis, chairman of the committee to plan the campaign.

KANSAS

Personal—Dr. Frank Lightfoot has been appointed health officer of Great Bend, succeeding the late Dr. Addison Kendall. Dr. Schubert D. Henry resigned as director of public health of Kansas City, effective August 1, and has been succeeded on a part time basis by Dr. Henry W. Kassel.

Society News—Dr. William W. Duke, Kansas City, Mo., addressed the Shawnee County Medical Society in Topeka, October 2, on 'The Dawn of a Specialty in Medicine: Allergy and Physical Allergy'. Dr. Rolla B. Stafford, Salina, discussed medical practice in the Virgin Islands before the society, September 5. Dr. George B. Morrison, Wichita, addressed the Ford County Medical Society, September 8, on transurethral prostatectomy. At a meeting of the Lyon County Medical Society, September 5, Dr. John B. Brickell, Emporia, among others spoke on 'Surgical Treatment of Pulmonary Tuberculosis'. Dr. John W. Ames, Denver, addressed the Sedgewick County Medical Society, Wichita, October 6, on 'Newer Conceptions of Childhood Tuberculosis'. Drs. Erastus F. Edgerton and Howard C. Curtis, both of Wichita, spoke before the society, October 17, on 'Clinical and Surgical Aspects of Biliary Tract Disease and Mental Conditions Following Brain Injuries', respectively. Dr. Lewis D. Johnson, Chanute, discussed pyelitis before the Labette County Medical Society, September 27.

MASSACHUSETTS

Personal—Dr. George H. Bigelow, former state health commissioner, and his successor, Dr. Henry D. Chadwick, were honored by the Massachusetts Tuberculosis League with a dinner in Boston, October 26. Dr. Bigelow is now director of the Massachusetts General Hospital, succeeding Dr. Frederic A. Washburn. Dr. Chadwick was formerly controller of the tuberculosis division of the Detroit Health Department. Dr. Hans Zinsser, professor of bacteriology and immunology, Harvard University Medical School, Boston, was given an honorary degree by Lehigh University, Bethlehem, Pa., during its celebration of Founders Day, October 4. Dr. Zinsser delivered the principal address of the occasion.

Dr. Mohr Gives Dunham Lectures—Dr. Otto Louis Mohr, professor of medicine, Royal Frederiks University, Oslo, Norway, will deliver three lectures under the Edward A. Dunham Lectureship for the Promotion of the Medical Sciences on 'Genetics and Pathology', at Harvard Medical School. The individual titles of the lectures will be:

- November 20. Basic Conceptions. Mechanism of Heredity and Sex Determination. Inheritance of Pathologic States in Man. Hereditary Factors in Pathology.
- November 22. Origin of Injurious Hereditary Factors by Mutation. Their Action as Revealed by Illustrative Cases in Human Pathology. Lethal Factors. Pathology of Twins.
- November 24. Intersexuality. Rays and Heredity. Alcohol and Heredity. The Tumor Problem. Intermarriage and Crossing. Some Bearings of Genetics on Medical Practice.

Surgical Meeting—The annual meeting of the New England Surgical Society was held at Boston, September 29-30. The following program was presented:

- Dr. Horace K. Sowles. Carcinoma of the Small Intestine.
- Dr. Frank H. Lahey. Operative Management of Cancer of the Rectum.
- Drs. Robert B. Greenough, Cranley W. Taylor, Charles E. Dumas. Cancer of the Breast. End Results. Massachusetts General Hospital, 1921-1922-1923.
- Drs. Taylor, Channing C. Simmons, Richard H. Wallace. Cancer of the Breast. End Results. Massachusetts General Hospital, 1924-1925-1926.
- Drs. John Homans and George M. Hass. Regional Ileitis. A Clinical Not a Pathological Entity.
- Dr. Ireland S. McKim. Abdominal Symptoms With or Without Abdominal Lesions in Diabetic Acidosis.
- Dr. James Raglin, Miller. Hartford Conn. Spontaneous Rupture of the Stomach During Labor.
- Dr. Donald Munro. Diagnosis and Treatment of Acute Subdural Hematoma. A Report of Thirty Four Cases.
- Dr. Frederic Jay Cotton. Giant Cell Tumors of Bone.
- Dr. Ernest M. Daland. A Study of 236 Compound Fractures Treated at the Massachusetts General Hospital.
- Drs. William J. Mixer and Joseph Barr. Rupture of the Intervertebral Disk.
- Dr. Daniel C. Patterson. Bridgeport Conn. Appendices Epiploicae.
- Dr. Robert C. Cochran. Suppurative Thyroiditis.

Dr. Lyman Allen, Burlington, Vermont, delivered his presidential address at the annual dinner at Harvard Medical School.

on "The Early Medical History of Vermont" Officers elected include Drs Frederick B Sweet, Springfield, president, Channing C Simmons, Boston, vice president, and John M Burnie, Springfield, secretary

MICHIGAN

Personal—Dr Henry S K Willis has been named superintendent of the William H Maybury Sanatorium at Northville, succeeding Dr Bruce H Douglas who has become controller of the tuberculosis division of the Detroit Health Department

Dr Armstrong Honored—Dr Oscar S Armstrong, Detroit was guest of honor at a luncheon October 17, given by the Business Pioneers Association of Detroit Dr Armstrong president of the Wayne County Medical Society in 1892-1893 is the oldest physician in point of continuous active practice in Detroit according to *Detroit Medical News*

Memorial Meeting to Dr Davidson—The surgical section of the Wayne County Medical Society held a memorial meeting in honor of the late Dr Edward C Davidson, October 23 Dr Roy D McClure opened the session with a talk on 'An Inspiration from His Life and Work' Other speakers were Drs Plinn F Morse on "The Pathology of Burns" and Grover C Penberthy, 'Surgical Management of Burns'

Society News—Speakers before the Berrien-Cass County Medical Society at Benton Harbor, October 23, included Drs Osborne A Brines and Ralph L Fisher Detroit on Role of Hemorrhage in Sudden Death" and Coronary Thrombosis" respectively—Dr William R Clinton, Detroit read a paper on 'Diagnosis and Treatment of Liver Abscesses' before the Jackson County Medical Society, October 3—The first meeting of the year of the Michigan Pathological Society at Eloise, October 14 was devoted to a discussion of ovarian tumor—Dr James Milton Robb Detroit, addressed the Monroe County Medical Society in Monroe, October 25 on medical economics—Dr William M Donald spoke on diabetes before the East Side Physicians' Association, October 26—At a meeting of the Detroit Oto Laryngological Society October 18, Dr William Mithoefer Cincinnati, discussed 'Nasal Accessory Sinus Problems'

MINNESOTA

Mrs Melish Wilson Dies—Mrs Maude Melish Wilson for many years editor for the Mayo Clinic and author of a textbook on medical writing died at the Mayo Clinic, Monday, November 6 after a long illness

MISSOURI

Phonetic Laboratory—A phonetic clinical laboratory has been installed at the Central Institute for the Deaf St Louis where persons with defective speech and hearing may see a graph of the sound vibrations of their speech and compare it with pictures of normal vibrations The institute has an enrollment of sixty nine children in the grade school, sixty-seven children and adults in the speech correction department and thirty eight adults in the lip-reading classes

Society News—A symposium on deafness constituted the meeting of the St Louis Medical Society October 24 with Dr Eugene T Senseney, Cordia C Bunch Ph D Dorothy Wolff Ph D and Dr Louis K Guggenheim as speakers The clinical manifestations of encephalitis were discussed by Drs Joseph F Bredeck Goronwy O Broun George Ives and James F McFadden before the society, October 17—A joint meeting of the Jackson and Wyandotte (Kan) county medical societies was addressed, November 14 by Dr Carl F Nelson, Lawrence, Kan, on 'Metabolism of Malignant Tumors'

NEW HAMPSHIRE

Personal—Dr John P Bowler Hanover, was elected president of the Association of Resident and Former Resident Physicians of the Mayo Clinic and Mayo Foundation at the annual meeting in Rochester, Minn October 7

NEW YORK

Veteran Practitioners Honored—The Orleans County Medical Association gave a dinner at Knowlesville recently in honor of four of its members who have practiced for more than fifty years Drs Fremont W Scott Medina Charles E Fairman Lyndonville Richard W Bamber Waterport and John E Sutton Albion Dr Fairman who has practiced sixty six years is said to be the oldest physician in point of service in the county Dr Scott was unable to attend the dinner on account of ill health

Society News—The program of the Nassau County Medical Society October 24 in Mineola, was devoted to discussion of peptic ulcer by Lester J Schultz, Ph D, New York, whose subject was "A Practical Intravenous Method for Treatment of Peptic Ulcer" and Drs Louis A Van Kleeck, and Harold A Butman, Manhasset, "Peptic Ulcer—A New Intravenous Therapeutic Agent for Its Treatment"—The sixth district branch of the Medical Society of the State of New York held its annual meeting in Norwich, October 18 Guest speakers were Drs Floyd E Keene Philadelphia on "Radium Therapy in the Treatment of Uterine Myoma", Edward M Livingston, New York Aids to Precision in Diagnosis A Practical Study of Abdominal Pain Rigidity and Tenderness", Frederic E Elliott Brooklyn, The New Economic Philosophy Applied to Medicine' and Arthur W Booth, Elmira, "Practical Points in Proctology"

New York City

Personal—Prof Otto H Warburg, director of the Kaiser Wilhelm Institute for Cell Physiology, Berlin-Dahlem and winner of the Nobel prize in medicine in 1931 delivered an address on physiology at Columbia University College of Physicians and Surgeons October 23—Dr Karl Landsteiner of Rockefeller Institute for Medical Research has been elected an honorary fellow of the Royal Society of Medicine, London

Cornerstone for Department of Health Building—A seven ton cornerstone for the new building of the departments of health, sanitation and hospitals was laid, October 30 Dr James Alexander Miller presided The laying of the cornerstone marked resumption of work on the building which was begun late in 1931 (THE JOURNAL Jan 2, 1932, p 56) It will be ten stories high and will cover the entire block bounded by Worth Centre, Lafayette and Leonard streets

NORTH DAKOTA

Society News—Dr John McEachern, Winnipeg, Manito, Canada addressed the Grand Forks District Medical Society, recently at Grafton, on cardiology—The North Dakota Academy of Ophthalmology and Otolaryngology held its fall meeting jointly with the South Dakota Academy at the Mayo Clinic, Rochester, Minn with addresses and demonstrations by members of the clinic staff as features of the meeting

OHIO

Personal—Francis L Landacre, Ph D, for many years chairman of the department of anatomy at Ohio State University College of Medicine, Columbus, died, August 23—Dr Henry J John, Cleveland has been named head of a newly created department of metabolic diseases at St Luke's Hospital, Cleveland newspapers report Fourteen rooms have been provided for the study of patients by the department which will for the present devote itself to diabetes and obesity

Institute on Vascular Disease—Drs Carl J Wiggers and Roy W Scott Cleveland and Geza de Takats Chicago presented a symposium on peripheral vascular disease at the meeting of the Cincinnati Academy of Medicine, November 6 Dr Wiggers discussed control of the circulation in the small vessels Dr Scott, clinical aspects due to changes in the blood vessels and Dr de Takats diagnosis and management Dr Walter M Simpson Dayton, led the discussion In connection with this meeting the Heart Council of Greater Cincinnati and the department of medicine University of Cincinnati College of Medicine joined the academy in presenting an institute on cardiovascular disease at the Cincinnati General Hospital during the day

PENNSYLVANIA

Hospital News—Dr Cyrus C Sturgis professor of internal medicine University of Michigan Medical School Ann Arbor will deliver an address at the Western Pennsylvania Hospital Pittsburgh November 14 on 'Anemia—Classification and Treatment' The occasion will inaugurate the celebration of an annual 'West Penn Day' to which the board of directors invites the medical profession

Assemblies for Practitioners—For the second year a series of special assemblies for practicing physicians will be held at George F Geisinger Memorial Hospital Danville during the winter The first meeting was held October 26 with Dr John A Kolmer, Philadelphia as guest lecturer Dr Kolmer presented two addresses on Present Status of Biologic Therapy in the Prophylaxis and Treatment of Diseases and Methods of Evaluation, Compounds Employed in the Treatment of Syphilis and the Amount of Treatment to Be Given respectively

Philadelphia

Division of Anesthesia—The medical board of the Philadelphia General Hospital has established a division of anesthesia in the department of surgery, with Dr. Henry S. Ruth as chief. This move was made "to turn this art back to the medical profession" according to a statement issued by the board. Only physicians will be trained in the specialty.

Annual Dinner—The forty-seventh annual dinner of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held Tuesday, December 5, at the Philadelphia Country Club Ball Room with Dr. David Riesman as guest of honor. Ex-residents are requested to send their correct addresses to the secretary, Dr. George Wilson, 133 South Thirty-Sixth Street, Philadelphia.

Society News—George W. Raiziss, Ph.D., among others addressed the College of Physicians of Philadelphia November 1, on "Experimental Chemotherapy and the Destruction of *Spirochaeta Pallida* in the Brain." At a meeting of the Obstetrical Society of Philadelphia, November 2, speakers were Drs. Julia Faith Skinner Fetterman, on "Malignancy in Cervical Polyps," Robert A. Kimbrough, Jr., "Value of Hormonal Study in the Diagnosis of Chorionepithelioma," and Thaddeus L. Montgomery, "Premature Separation of the Placenta with Special Attention to the Placental Lesions." Drs. Bernard P. Widmann and Herman W. Ostrum addressed the Philadelphia Roentgen Ray Society, November 2, on "Evaluation of the Roentgen Diagnosis of Aneurysms." The Philadelphia County Medical Society observed Pennsylvania Health Day, November 8, with the following program of addresses: Drs. James M. Anders, "Some Reasons Why the Layman Fails to Preserve His Health," Charles W. Burr, "Prevention of Mental Disease," and John A. Kolmer, "Infections of the Respiratory Tract with Special Reference to Prevention." Dr. Howard W. Haggard, New Haven, Conn., was to address a special meeting October 30, according to the *Weekly Roster and Medical Digest* to present "an ethical practical plan, favorably considered by the Medical Economics Commission, to combat the quackery that is eating into your income and to increase the income of every ethical M.D." The scientific meeting of the society, October 14, was devoted to discussion of diseases of the colon, presented by Drs. Martin E. Rehfuss, on functional disorders, Harry Shay and Jacob Gershon-Cohen, on organic colitides, and Damon B. Pfeiffer, on neoplasms.

UTAH

Society News—Drs. Edward S. Pomeroy and Oza J. LaBarge presented papers before the Salt Lake County Medical Society, October 9, on "Relation of Prostatic Infection to Prostatic Hypertrophy" and "History of Medicine and the Allied Sciences Among the Saracens," respectively. Dr. John Rührh, professor of pediatrics, University of Maryland School of Medicine, Baltimore, addressed the society at a special meeting, September 28, on infantile paralysis.

WISCONSIN

Personal—Dr. Walter W. Peck, Darlington, recently celebrated the completion of his fiftieth year in the practice of medicine. Dr. Robert S. Vivian has been appointed health officer of Beloit to succeed Dr. Harry O. Delaney.

Society News—A symposium on x-ray films of the chest was presented at a combined meeting of the Outagamie and Waupaca county medical societies, October 17, by Drs. Silvanus A. Morton and Arthur A. Pleyte, Milwaukee, Charles D. Boyd, Kaukauna, and Earle F. McGrath, Appleton. Dr. Frank Gregory Connell, Oshkosh, addressed the Winnebago County Medical Society, Oshkosh, September 15, on peptic ulcer. Drs. William S. Middleton, Madison, and Theodore L. Squier, Milwaukee, addressed the Medical Society of Milwaukee County, October 13, on "Manifestations and Recognition of Allergic Diseases" and "Treatment of Lobar Pneumonia," respectively, and Mr. George G. Goetz, "Medical Relations with Insurance Companies." Drs. Francis B. McMahon and Eben J. Carey addressed the Milwaukee Academy of Medicine, October 17, on "Carcinoma of the Lip" and "A Century of Progress in Medicine," respectively. Medical societies of Racine, Kenosha, and Walworth counties held their annual joint meeting in Kenosha, October 4. Speakers were Drs. Stanley I. Seeger, Milwaukee, on "Modern Treatment of Burns," Clifford G. Grulee, Chicago, on "Interesting Conditions of the New-Born," and Harry E. Mock, Chicago, on "Multiple Injuries with Skull Fractures." Following the dinner, Mr. J. George Crown-

hart, Madison, secretary of the Wisconsin State Medical Society, among others, gave an address on "The Economic Status of Medicine in Wisconsin."

GENERAL

Radio Advisory Board to Byrd Expedition—A radio consulting medical advisory board to give the second antarctic expedition of Admiral Richard E. Byrd a consultation service in case of emergency has been formed. The board has representatives in the East and Middle West and on the Pacific Coast so that some member may be reached at any hour of day or night.

News of Epidemics—Thirty-two cases of smallpox were reported in Oshkosh, Wis., October 19. Schools and theaters of Windsor, Vt., were closed, October 16, after an outbreak of five cases of infantile paralysis with two deaths. The health officer of Okmulgee County, Okla., reported 113 cases of diphtheria in the county, October 18. Typhoid was also said to be prevalent.

Fifth Annual Gorter Award—The American Association for the Study of Gorter announces for the fifth year its offer of a prize of \$300 for the best essay based on original research work on any phase of gorter. Competing manuscripts must be in English and must be submitted to the corresponding secretary, Dr. Julius R. Yung, 670 Cherry Street, Terre Haute, Ind., not later than April 1, 1934. The award will be made at the annual meeting of the association in Cleveland, June 7-9, 1934. It is hoped that the offer will stimulate research especially on the basic cause of gorter.

Society News—Dr. Charles H. Mayo, Rochester, Minn., was chosen president elect of the Interstate Post Graduate Medical Association of North America at the annual meeting in Cleveland, October 16-21. Dr. John M. T. Finney, Baltimore, became president. Dr. Ross V. Patterson, Philadelphia, was elected president of the Association of American Medical Colleges at the annual meeting in Rochester and Minneapolis, Minn., October 30-November 1. Dr. Charles W. Poynter, Omaha, was elected vice president and Dr. Fred C. Zappie, Chicago, reelected secretary. Nashville was selected as the place for the meeting in October, 1934.

Annual Tuberculosis Seal Sale—The National Tuberculosis Association announces its twenty-seventh annual sale of Christmas seals. Funds derived from the seal sale support the activities of more than 2,000 state and local antituberculosis associations throughout the country. In spite of the past four years of depression the death rate from tuberculosis has continued to decline, but health officials are pointing out that this is probably the result of momentum gained in better times and that a rise may be expected when the full effects of reduced standards of living are felt. Many sanatoriums have continued to operate through the loyalty of their staffs and low costs, but sooner or later many will have to close their doors, the association asserts, unless help is given.



Change in Status of Licensure—The Alabama State Board of Medical Examiners reports the following action:

Dr. James T. Davis, Akron, license revoked for one year, August 19, for the excessive use of alcohol coupled with morphine addiction.

Dr. Julius G. Henry, Akron, license revoked for one year, August 19, for the excessive use of alcohol.

The Georgia State Board of Medical Examiners reports the following action:

Dr. Charles Verstandig, Atlanta, license revoked and declared void, October 12. Dr. Verstandig had been allowed to take the board examination under a misapprehension of facts, since the board was under the impression that he was a graduate of a class A medical college.

The Massachusetts Board of Registration in Medicine reports the following action:

Dr. Dwight T. Willis, Boston, license suspended, September 28, because of his conviction in court for conspiracy to perform an illegal operation. Dr. Willis is at present serving a six months sentence in Suffolk County House of Correction.

Annual Report of Rockefeller Foundation—After ten years of concentration on aid for building and endowment of certain medical schools, the Rockefeller Foundation has shifted its emphasis to support of specific research projects, according to the annual report for 1932. Of \$3,090,973 appropriated for the medical sciences during the year, the largest amount, \$1,282,652, was given to McGill University, Montreal, for the establishment of a neurologic institute. Further attention was paid to the field of neurology by various small appropriations to institutions in Germany, Switzerland, and London. Other

problems in medical research which received support during the year were studies of physiology of the acoustic nerve whooping cough and virus diseases, biologic research with radium and problems of sex. Funds were provided for 383 fellowships for workers in medical science. The foundation expended \$2,539,057.15 in 1932 for public health work, in which the principal aim was to correlate studies of a disease in its environment with investigations in the laboratory. An extensive program for control of yellow fever was carried on in cooperation with the government of Brazil, including support for a laboratory in Bahia, in addition to support of laboratory research at Lagos, Nigeria, and in New York. Studies were carried on in various parts of the world on malaria, hookworm, tuberculosis, yaws, undulant fever, the common cold, schistosomiasis and typhoid. In addition, the foundation contributed toward development of health services in forty three foreign countries, gave assistance to the central health administrations of eleven states and to local health work of 164 counties in twenty two states in the United States and, finally, provided 225 international fellowships in public health. The entire amount appropriated for the year was \$11,577,064 other fields covered being social and natural sciences and the humanities.

Southern Medical Association Meeting—The twenty-seventh annual meeting of the Southern Medical Association will be held in Richmond, Va., November 14-17, under the presidency of Dr. Irvin Abell, Louisville, Ky. General clinical sessions will be held the first two days at the Hotel John Marshall, with the following speakers, among others:

Dr. John O. McReynolds, Dallas, Texas, Role of the Crystalline Lens in the Function of Vision in Men and in the Lower Animals. Practical Consideration of Cataracts in the Human Subject.
Dr. George M. Piersol, Philadelphia, Clinical Value of Studies on Peripheral Circulation.
Dr. W. McKim Marriott, St. Louis, Some Therapeutic Procedures Based on Recent Advances in Biological Chemistry.
Dr. Dean Lewis, Baltimore, President, American Medical Association, Abdominal Lesions: Their Signs and Symptoms.
Dr. Oswald S. Lowsley, New York, New Developments in Kidney Surgery.
Dr. George T. Pack, New York, Treatment of Gastric Cancer by Surgery and Radiation Treatment.
Dr. Charles Mazer, Philadelphia, Diagnosis and Treatment of Functional Uterine Bleeding.
Dr. John deJ. Pemberton, Philadelphia, Rational Treatment of Hyperthyroidism.

Speakers who will address sectional meetings during the two following days include:

Dr. Charles F. McKhann Jr., Boston, Immunity in Infants to Infectious Disease.
Dr. Lawrence Brown, Saranac Lake, N. Y., Referred Abdominal Symptoms from Pulmonary Tuberculosis.
Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, Washington, D. C., The Recent Outbreak of Encephalitis in St. Louis.
Dr. Charles A. McKendree, New York, Psychopathic Personality: Medicolegal Aspects.
Dr. Byrl R. Kirklin, Rochester, Minn., Roentgenologic Features of Ulcerating Lesions of the Stomach and Their Differential Diagnosis.
Dr. Frederick A. Collier, Ann Arbor, Water Metabolism in the Surgical Patient.
Dr. Clay Ray Murray, New York, Recent Observations in European Orthopedic Clinics.
Dr. Logan Clendening, Kansas City, Mo., The Stone Age of Surgery.
Dr. Edward H. Cary, Dallas, Texas, Ocular Tumors.
Drs. Jacob C. Geiger and Jacques P. Gray, San Francisco, Intravenous Use of Methylene Blue Solutions in the Treatment of Cyanide and Carbon Monoxide Poisoning.

Special clinics will be held by the following sections: dermatology, conducted by Dr. V. Pardo Castello, Havana, Cuba; bone and joint surgery, Dr. Robert W. Johnson, Baltimore; obstetrics and gynecology, Dr. Henricus J. Stander, New York; and Floyd E. Keene, Philadelphia, radiology, Dr. Byrl R. Kirklin, Rochester, Minn.; urology, Alfred I. Folsom, Dallas, Texas; and medicine, Drs. Oliver H. Perry, Pepper and Baldwin, H. E. W. Lucke, Philadelphia. In addition an allergy clinic and round table discussion has been arranged by Dr. Warren T. Vaughan, Richmond, who will hold clinics. Dr. George Piness, Los Angeles, will be the guest speaker on "Food Sensitivity: Its Status in Allergy." During the same week the National Malaria Committee, the southern branch of the American Public Health Association, the American Society of Tropical Medicine and the southern section of the Society for Experimental Biology and Medicine will hold their annual meetings in Richmond. A reception and ball in honor of the president will be held Wednesday evening at the Mo-que and there will be golf and trap shooting tournaments Thursday afternoon.

Deaths in Other Countries

Pierre Paul Emile Roux, director of the Pasteur Institute, Paris, renowned for research in collaboration with Pasteur and for his pioneer research on diphtheria, November 1, aged 89.
—Sir George Henry Makins, London, author and formerly President of the Royal College of Surgeons, November 2, aged 80.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 21, 1933

Facts About the Unfit

Lord Horder is the leading advocate in this country of birth control and the sterilization of the unfit. In an address in the graduate course at the Hampstead General Hospital he said that a national stock taking showed some unpalatable facts. In this country, one in 120 persons was feeble-minded, one in 200 was insane, and one in ten was too dull or too sickly to be absorbed into industry. The expense of educating and caring for these inefficient was enormous, but more serious was the fact that the future stock was being recruited from them. The aim of eugenics was to control the reproduction of unfit types and to encourage fertility in types above the average. But the eugenic movement sought to operate only by voluntary methods, doing nothing to infringe on the liberty of the individual. It advocated the voluntary sterilization under proper safeguards of all mental defectives, all mental convalescents and all who suffered from gross mental and physical defects that were proved to be transmissible. Compulsory sterilization though legal in some countries, was not advocated in this country.

In regard to birth control, he suggested that local authorities should be empowered to provide, under medical supervision, instruction in contraceptive methods for married women who asked for it on economic and eugenic grounds as well as on medical grounds on which alone instruction was now given. The science of heredity should be taught as part of the medical students' curriculum. Enormous opportunities for adding to the knowledge of genetics were lost by lack of training and therefore, lack of interest among physicians. There should be attached to the ministry of health a small group of medical men and women to whom vital statistics of life and death and disease should be readily available on the one hand, and contact with hospitals and general practitioners on the other.

Asthma Due to Deficiency of Epinephrine

The value of the injection of epinephrine in the treatment of asthma is well known but the theory, advanced at the Section of Therapeutics of the Royal Society of Medicine by Prof. J. H. Burn, that the attacks are due to deficiency of epinephrine in the system is new. He referred to the work of Loewi who suggested in 1921 that the autonomic nervous system acted by liberation of a chemical substance at its terminations. It was now accepted that the parasympathetic nerves liberated acetylcholine and it was widely believed that the sympathetic liberated epinephrine or an epinephrine-like substance. Dale and Dixon showed that tyramine acted like epinephrine but was less potent. But in a perfused organ the vasoconstrictor action of tyramine was lost (as well as that of ephedrine) although the constrictor action of epinephrine and the dilator action of histamine were well displayed. Further investigation showed that the site of action of tyramine and ephedrine differed from that of epinephrine for the action of the two former was lost in organs of which the sympathetic supply was degenerated while the action of epinephrine was retained. Hence epinephrine must act beyond the nerve endings while tyramine and ephedrine acted on these endings. But if the sympathetic nerve acted by liberation of epinephrine, a store of this substance must be already present at the nerve endings for release to enable tyramine or ephedrine to act. Professor Burn found also that in the presence of epinephrine both ephedrine and sympathetic stimulation produced vasodilator effects not otherwise seen. The conclusion was drawn that the response to symp-

thetic stimulation in the body depended on the amount of epinephrine in the circulation. This agreed with the observation of Graham that asthmatic patients who needed much epinephrine did not respond to ephedrine. Evidently their blood contained too little circulating epinephrine. Professor Burn considered such persons analogous to those deficient in thyroid secretion. Hence he suggested that those who had the least amount of circulating epinephrine would be predisposed to asthma. Attacks would occur because the bronchodilator nerves failed to act efficiently. They would be brought about whenever the bronchi were unduly constricted, by vagus impulses, by the reflex effect of nasal inflammation or by a chronic catarrhal state of the bronchi themselves. If the precursors of epinephrine could be identified, its formation might be increased in the body by their addition.

Food Poisoning from Pudding Made from Peas

A small outbreak of food poisoning from an unusual source has occurred in the St. Pancras district of London. It was traced to pudding bought in a shop. Ten persons who partook were taken ill; two (boys aged 11 and 13) died. The symptoms were diarrhea, vomiting, abdominal pain, passage of blood and mucus, cyanosis, tachycardia and high temperature. A high leukocytosis (up to 76,000) was observed. The pudding was made by boiling dried peas with sodium bicarbonate in an enamel sauce pan. The peas were then beaten up with salt in a glazed earthenware vessel. About six other persons bought the remainder of the supply but are not known to have suffered. Pudding made from the same supply of peas was sold on the preceding day without any ill effects being reported. Samples of the peas, bicarbonate and salt used were chemically analyzed without any impurity being found. In one case an organism thought to be Flexner's bacillus was isolated from the stools.

Panel Physicians in the Hands of Money Lenders

At a meeting of the National Association of Insurance Committees, it was stated that the cases in which young panel physicians assigned all their panel fees to money lenders were on the increase. In some cases they were the salaried servants of the money lenders and subject to a month's notice. The Lancashire Insurance Committee had on its books seventy-eight cases in which panel fees amounting to \$175,000 a year were assigned to money lenders, who were exercising an increasing influence on the administration of medical benefit though their only qualification was money. The young physician who had not the money to buy a practice went to an agency specializing in advancing on the security of practices. The first thing he had to do was to sign an undated form of resignation from the panel service and then a mortgage at the prodigious rate of 40 per cent. If he became soured and threw up the practice, the money lender would pocket the gains to date and look out for a fresh victim. He completed the form of resignation already in his hands and notified the insurance committee of the name of the successor. In one case the wife of a physician, herself also one, became a party to her husband's contract and covenanted to apply for admission to the panel list and have transferred to her her husband's patients, if called on to do so by the mortgagee. The association decided to refer the matter to the executive council to take whatever action was deemed necessary.

Automobile Accidents in London: Four Deaths Daily

Notwithstanding all that has been done to regulate automobile traffic—one-way streets, roundabouts and control of crossings by police as well as by automatic signals—a substantial increase in the number of accidents has been recorded in London in the last three months. The total number of fatal accidents for the three months ended September 30 was 381

compared with 304 for the corresponding period of last year. The number of persons killed exceeds an average of four a day. The number injured was 16,208, against 14,340 for last year. Private automobiles headed the list of vehicles involved, with 125 killed, compared with 87 last year. The other figures included: trade and commercial vehicles, 83 killed and 2,170 injured; against 66 killed and 1,795 injured last year; motor cycles, 80 killed and 3,420 injured, against 87 killed and 3,430 injured; omnibuses, 25 killed and 611 injured, against 20 killed and 527 injured; coaches, 16 killed and 162 injured; against 5 killed and 77 injured; cabs, 8 killed and 337 injured, against 6 killed and 297 injured last year; street cars, 6 killed and 329 injured; against 3 killed and 380 injured last year. Bicyclists were involved in accidents in which 33 persons were killed and 3,633 injured, compared with 25 killed and 3,015 injured last year. The increase in accidents is partly due to the constantly increasing number of automobiles on the streets, but increased speed seems to be more important and a demand has arisen for the reimposition of a speed limit which was abolished by the last road traffic act. Few pedestrians can cross a street in less than ten seconds while many modern streets require fifteen seconds. The pedestrians may look carefully to the right and left but do not appreciate that unless they run hard they may be struck by one of the cars in the distance or round the corner. On the other hand many drivers resent anything ahead which may check a smooth and rapid run and trust to the agility of pedestrians to avoid an accident.

Fatal Phrenic Avulsion

Phrenic avulsion is generally regarded as a trivial operation. But Drs. Cassidy and Lee of St. Thomas's Hospital have reported in the *British Medical Journal* a case in which it proved fatal. A lorry driver, aged 23, suffered from bronchiectasis following postoperative bronchopneumonia. He was expectorating a pint of fetid sputum daily and had lost 3 stone (19 Kg.) in weight. On admission to the hospital, Aug. 15, 1932, he weighed only 7 stone and 5 pounds (46.7 Kg.). The fingers were clubbed and the physical signs suggested gross bronchiectasis at the base of the right lung, with lesser involvement of the left base. By the injection of iodized oil intratracheally these findings were confirmed. He was treated by inhalations of creosote, postural drainage and bronchoscopic lavage but steadily deteriorated. Phrenic avulsion was attempted under local anesthesia, Jan. 16, 1933, the operating table being tilted so as to elevate the head and chest. The nerve was exposed in the neck and clamped, whereon the patient hiccuped once and became acutely dyspneic. After an abortive attempt to cough he lost consciousness. A tracheal catheter was passed and a considerable quantity of pus aspirated. Oxygen was then blown in by way of the trachea and he slowly improved. The incision was rapidly closed and no attempt made to proceed with the operation. He was sent to the ward, where he again became acutely dyspneic and died. The necropsy showed complete collapse of the lower half of the right lung. The trachea and main bronchi contained much pus. Gross bronchiectasis involved the right lower lobe with cavities of the size of a walnut. Bronchiectasis in much less degree involved the rest of both lungs. Death was attributed to asphyxia consequent on sudden flooding of the whole bronchial tree by pus squeezed out of the cavities in the right base when the right dome of the diaphragm made its rapid ascent. The authors suggest that preliminary postural drainage or bronchoscopic lavage would have saved the patient.

Death of Sir Arthur Mayo Robson

The death of Sir Arthur Mayo Robson, at the age of 80, removes a great pioneer of abdominal surgery. A Yorkshire man by birth he was educated at the Leeds School of Medicine,

where he distinguished himself by obtaining every prize open to a student, though he had at the same time to work as assistant to a local physician. In 1876 he was appointed lecturer on anatomy in the school, and in 1884 he became surgeon to the Leeds General Infirmary. Later he was appointed lecturer in pathology in the school and professor of surgery in the Yorkshire College. In 1902 he moved to London. His most important pioneer work was done on the treatment of gallstones and diseases of the bladder, on which he was the leading authority of his day. He wrote on these subjects in Allbutt's System of Medicine and in Keen's System of Surgery. In a tribute to him, Lord Moynihan, who was his house surgeon, says "His capacity for seizing upon relevant features in a new problem, of capturing the essential principle and neglecting specious nonessentials seemed like wizardry." At one period he was the greatest surgeon in Europe. Though his chief work was abdominal, he distinguished himself in the whole field of surgery. He was the first in this country to undertake nerve grafting. He quickly followed Allingham in removing torn semilunar cartilages. He was one of the first to excise spina bifida. His fame as an operator was so great that surgeons came from all over Europe to see him at work. He was president of the Surgical Section of the International Medical Congress in 1900 and 1906 and of the British Gynaecological Society. At the outbreak of the Great War he had retired from practice, but he at once went with a field hospital to France and by invitation of the French authorities organized a complete hospital for the French army. For his services he was appointed to the Legion of Honor. He also served in Egypt and Gallipoli.

Dr Banting Honored

Dr F. G. Banting, professor of medical research in Toronto University and the discoverer of insulin, was admitted an honorary fellow of the Royal College of Surgeons. He was already a member of the college. He was welcomed by the president, Sir Holburt Waring, and signed the roll in the presence of the council. It is three years since Dr Banting was nominated for the fellowship, but this was the first opportunity to confer it on him. He was born in 1891.

PARIS

(From Our Regular Correspondent)

Sept 27, 1933

Important Changes in the Medical Curriculum

The superior council of public instruction has made two important changes in the medical curriculum. The first point concerns a modification in the program of premedical studies that was formerly pursued in the schools of medicine. The professors of medicine complained then that this program was too theoretical and that it amounted practically to the loss of a year's time, for the student should be brought as soon as possible, in contact with the anatomic institute and the hospital wards. Under the influence of these arguments a preliminary certificate for medical students was granted after a year's study in a faculté des sciences. It is now recognized that this was a mistake. The instruction of the professors in the facultés des sciences proved to be much more theoretical than in the facultés de médecine, and quite disconnected from any applications to medical practice. Furthermore it was necessary to retain in the facultés de médecine the chairs of instruction in medical physics, biologic chemistry, parasitology and materia medica and pharmacology, with the result that the students go twice over the same material. The facultés de médecine would have liked to have the preliminary certificate abolished and replaced by a year of supplementary studies added before the terminal thesis in order to increase the student's clinical experience.

The facultés des sciences in the discussion before the superior council refused to dismiss the professors in charge of the studies in question. However, the facultés de médecine gained their main contention, and the creation of a supplementary year was granted. Hence, beginning Oct 1, 1934, students of medicine must complete six years of medical study which is going to add a considerable amount to the total expense of a medical education. There will be many protests. The preliminary medical course, it appears, will be modified, taking on a more directly biologic character. This change seems hardly justified since the sciences studied in the facultés des sciences will be repeated in the faculté de médecine during the third year. The sixth supplementary year has more to justify it. The medical students, French and foreign, have become so numerous, in spite of the unfavorable future outlook for the medical profession, that only the students who secure, through a competitive examination, posts as interns or externs can take up the practice of medicine with much hope of a reasonable compensation. The others are only auditors of the professor's lecture in the hospital wards, far from the patient's bedside, and are never permitted to make an examination of the patient on admission, to apply a dressing, to give immediate treatment of a dislocation or a fracture, much less to perform a surgical operation of any kind, all this work being reserved for the interns and externs. Henceforth, students who have hitherto been at a great disadvantage will, for one year, live the same life as the interns and externs and will perform important services both night and day under the same conditions that obtain for real professional practice. When the hospitals located in the university cities become too crowded, which is the case in Paris and Lyons, students will be permitted to serve as assistants in hospitals located in the provinces, where assistants are often much needed. The proposed reform will contribute toward raising the standard of general practitioners. Another regulation introduced by the superior council reinforces the rigorous character of the various examinations and provides for the definitive elimination of a student after a certain number of failures. The latter reform has received the strong approval of the Confederation des syndicats médicaux, as likely to aid in doing away with the surplus of physicians, and has appeared preferable to the limitation of the number of students to be admitted by the facultés de médecine. The latter method did not appear feasible because of the wide variations in attendance at the various institutions.

The New Neuropsychiatric Clinic

The Clinique de neuro psychiatrie infantile, created at the Faculté de médecine de Paris, is an innovation. The suggestion for the creation of the clinic emanated from a Paris attorney, Mr. Rollet, who was animated by a lofty spirit of charity, developed by his contacts with the movement in aid of delinquent children. With perseverance, he has succeeded in creating within the French system of judicial organization, special courts for the trial of children charged with various misdemeanors who heretofore had been tried by the ordinary courts along with adult criminals. The judge had either to commit the child to a house of correction—a sort of prison school and workshop combined—where his complete corruption was almost a certainty, or to return him to his parents, that is to an environment in which the absence of supervision had been the cause of his downfall. The children brought before the juvenile court are now subjected to an examination by medical specialists in the children's psychiatric clinic before any further action is taken. The new clinic created meets this need and is open at the same time as a public dispensary to the parents who of their own accord take their children there before the police has had occasion to arrest them for some misdemeanor. The clinic serving also as a center of study and instruction is

visited frequently not only by physicians and legislators but also by psychologists eager to study various phases of mental development in man. The well known writer of novels Paul Bourget, who is 80 years of age, is one of the most frequent visitors at the dispensary. Of the 665 children examined during the six months just passed, 35 were sent to psychopathic hospitals. This group was composed of psychopathic patients, idiots or imbeciles, children with a greatly disturbed equilibrium, epileptic patients, patients who have only partially recovered from encephalitis, inadapted perverts, and adolescents with dementia praecox. Fifty nine children were placed in institutions of reform, 277 were turned over to children's hospitals for treatment, 237 were entrusted to an *œuvre de patronage* or home-finding society which places the children in the rural districts in the homes of farmers to learn farming, where they remain under the periodic control of the society. Thirty-two were placed in special homes for girls while twenty-four remained under observation.

Vaccination Against Yellow Fever

Yellow fever continues to be widely prevalent in the Senegal although it is decreasing. The authorities have become resigned to the belief that the disease can be eradicated only through the general application of vaccination. The Institut Pasteur de Paris has therefore organized a public vaccination service for persons about to go to the Senegal which service is under the direction of A. Pettit and C. Stepanopoulo who have made special studies on yellow fever. Since 1926, they have made from inoculated monkeys an excellent immunizing vaccine. They can no longer procure a sufficient number of monkeys, however, since the price of them has risen. They employ, therefore, concurrently the procedure of Drs. Sawyer, Kitchen and Lloyd of the Rockefeller Foundation, which comprises a virus and an immunizing serum, the latter being derived from convalescent subjects. They have, however, modified the procedure by substituting immunized horse serum for the serum of convalescents since the horse serum is easier to procure and is more active. Mr. Stepanopoulo has vaccinated himself in this manner. Mr. Pettit is already immunized, having contracted yellow fever during his mission in the Senegal, about the time that Noguchi's death occurred.

BERLIN

(From Our Regular Correspondent)

Sept. 25, 1933

Public Health Department Dissolved

In connection with the administration of the reich by the national-socialist party, the department of public health has been dissolved and in its stead an expert council on public health created. Dr. Wagner, the leader of the German medical profession, has been chosen to organize the new council and to serve as its director. This council will handle all questions having to do with the preservation of the health of the German people, particularly questions pertaining to demographic science, hereditary biology, race hygiene, social hygiene and popular enlightenment on health problems, including questions that concern exponents of nature cures and various therapeutic cults. All party headquarters must submit to this council all questions that concern the fields taken over by the council must present all measures before they are carried out and must turn over for approval all reports to the authorities before they are submitted. In all matters that come under its jurisdiction, the council will deal with the reich, the *länder* and the communes and likewise with bodies established for the interpretation of public law, and is entitled to present inquiries, protests and petitions to these centers. The governmental authorities of the reich and the *lander* are requested when taking up matters

coming under the jurisdiction of the council, to get in touch with that body before reaching conclusions, and to issue similar instructions to subordinates and to legal bodies.

The Haff Disease

In previous letters the peculiar manifestations of disease occurring in the vicinity of the Haff, an arm of the sea, in East Prussia, have been discussed. At that time it was considered that acids combined with a resinous base were the cause of the disease, which originated chiefly in fishermen. The whole situation is not yet clarified. However, a survey by the Würzburg pharmacologist Professor Flury, in the *Klinische Wochenschrift* deserves attention. The assumption that the disease is due to arsenic poisoning which has long been the official conception is untenable, nor has adequate proof been furnished for the assumption that resinous acids play a causal role. The poor results following the introduction of preventive measures and the interruption in the development of new cases, would indicate that the origin of the disorder is not to be found in the municipal or industrial waste waters. It appears more than likely that the Haff itself contains the source of the poison. Through the disintegration of countless animal and vegetable organisms and particularly those of a microscopic nature vast quantities of poisons may be formed in the waters of the Haff. They may be of an exogenous nature—hemolytic, for instance—muscle and nerve poisons of the sapotoxin or the curare group, which are traceable to plankton accumulating in the mud and thence ingested by fish. On the other hand endogenous factors arising in the organism of human beings or of fish cannot be excluded. The fish diet of the population must have a connection with the disorder. In any event, it is an exaggeration to state, as the press did recently, that the Haff disease mystery has been cleared up.

Exaggerated Advertising of "Patent Medicines" Prohibited

For many years the exaggerated claims made in the advertising of "patent medicines" to the public have been a constant source of complaint. The *Nachrichtenblatt des Nationalverbandes der Deutschen Heilmittelindustrie* has published the new regulations to be observed in the advertising of medicines as set up by the 'Begutachtungs- und Beratungsstelle für Werbungsfragen'. The following excerpts deal with essential points. The advertising to the public of medicines alleged to be effective in grave diseases and advertising encouraging self-treatment of cancer, diphtheria, lupus, pulmonary tuberculosis, epilepsy, arteriosclerosis and the like, must be absolutely stopped. Testimonials of laymen prove in such cases absolutely nothing. Every manufacturer must therefore make a thorough investigation in order to ascertain whether he can furnish unquestionable scientific proof that the preparation or the apparatus will actually accomplish what he promises, the manufacturer who exceeds such limitations is subject to a penalty. The health authorities consider such assertions as "The remedy helps at once or never fails to help" as unprovable. The manufacturer may state 'The remedy has helped' if on demand he can furnish documentary proof based on scientific tests. Other exaggerations are warned against, for example, the use of the term 'preeminent' in referring to the remedy or the term 'glorious' in referring to the results. That manufacturers must avoid all misleading superlatives goes without saying. Advertisements in which an individual is put forward in the role of a 'grateful patient' to inform persons interested how he was cured of a grave disease are prohibited, they are calculated to deceive the public, since in reality the manufacturer is the one who inserts and pays for the advertisement. Testimonials and letters of thanks supplied by laymen have

little weight in proving the value of medicines. Such testimonials must not contain untrue statements or exaggerations calculated to deceive. Prophylactic remedies may not in this manner be put forward as medicines. The following explanation is given: "If the pharmaceutical industry does not wish to incur the danger of having the use of testimonials in advertisements entirely prohibited, it must of its own accord impose certain restrictions on itself. It is absolutely inadmissible to select from available testimonials precisely those for publication that announce a cure in a particularly severe case. Under no circumstances may the impression be given that results that were possibly secured under especially favorable circumstances are always attainable or to be expected with certainty." When the statements of physicians are used, names and places must without fail be given in unabbreviated form. The use of any official titles that might give a false impression is strictly forbidden. Writers of advertising copy who, for a remuneration, furnish favorable testimonials may possibly have their names published in connection with their offense. Guaranties of a cure are absolutely prohibited, likewise promises to return the sum paid for the remedy in case it does not prove effective. In stating the effects of the remedy, every advertisement must make it clear how the remedy acts in the disease in question and to what extent it can consequently influence the course of the disease. A statement that the remedy is of aid in a long list of diseases is deceptive.

JAPAN

(From Our Regular Correspondent)

Aug 28, 1933

Outbreak of Epidemic Encephalitis

Since the epidemic of 1924, encephalitis has appeared sporadically. Since last June, however, it has again been increasing in the central parts of Japan, and suddenly it broke out in the Rikyu Islands in the east China Sea near Formosa. From June to the end of July, sixty-eight cases were found, with twenty-five deaths. Of 298 patients in other districts 161 died. The total deaths were 220 out of 427 cases throughout the country. The Japan Science Promotion Association has formed a commission to study the cause of the epidemic. Professor Inada of the Tokyo Imperial University medical department has been appointed chairman. The commission is divided into eleven sections, each section having as its leader a well known specialist. Two groups have already been sent to places where the disease is raging. As this epidemic threatens to spread all over the country, the police and physicians are cooperating to prevent a general outbreak.

Study of Woman's Work on Farms

The Kurashiki Scientific Research Institute for Labor which was established by a millionaire and is the only institute of the kind in this country, has recently opened a department to study agricultural labor. Dr. Teruoka, chief of the institute, says: "About half of the people of Japan follow agriculture as their means of living. A characteristic of Japanese agriculture is that the work is done by family cooperation. In a farm house the master works eleven hours and forty-five minutes a day on an average, while the mistress works eight hours and fifty-nine minutes a day, besides doing domestic work for about four hours a day, so her work hours number thirteen. Her part in farming operations as a laborer as well as a mother is most important. Of late agriculture has inclined to man-powered operations, only to add more to her labor. What kind of culture and education has been given the woman who is to play such a valuable part in this great industry? Only a conservative traditional training has been given her, disregarding the strides made in all other business in recent years."

The institute is going to deal with material and information to be originated by itself to aid women to adjust themselves to modern ways. In order to obtain the best results of study, thorough and deliberate researches of a small number would be preferred to a great number of hurried investigations. The families to be studied with regard to their health and labor have been selected. They all belong to the middle class with a yearly income of about 1,000 yen and live on one hectare or so of land.

Roentgen Treatment of Filariasis

Filariasis, which is mainly found in the southern Loochoo Islands and in some districts in Japan proper, has long been considered incurable. After years of research Dr. Yamaguchi of the Nagoya Medical College has succeeded in treating the disease with the help of the x-rays. The only treatment heretofore applied was by means of drugs. Dr. Yamaguchi has shown that from eleven to twenty-two treatments with the x-rays all over the body will destroy the generative cells of the filaria and stop their reproduction, at the same time reducing the induration of the lymphatic vessels. He thus successfully treated all patients sent in. His success is considered here almost miraculous.

Society News

The Japan Physiologic Society held its twelfth general meeting at Kanazawa in July under the chairmanship of Dr. Ueno. Papers were read on noise, diet, nutrition, the relation between humidity and perspiration, and the theory of nerve conduction. There were many papers on the study of the heart. The meeting lasted three days, and 201 papers were read.

BUDAPEST

(From Our Regular Correspondent)

Sept 13, 1933

The Friendship Between Billroth and Brahms

Dr. Janos Bokay, retired professor of pediatrics at the University of Budapest and founder of the Medical Philharmonic Society, recently addressed the medical society on the friendship between Johannes Brahms and Billroth. It began when the latter taught surgery in Zurich (1860-1866). Brahms, yet a youth, was nearing the peak of his development as a composer of music. The Billroth-Brahms friendship lasted for almost three decades until the death of Billroth in 1894. There was scarcely four years' difference between their ages. Billroth was born in 1829, Brahms in 1833.

Billroth had a craving for music and he played well. In early youth he prepared for a musical career and from the great number of letters collected during the time of his professorship it is evident that his love for music lasted until his death. While in Zurich he wrote musical criticisms for the foremost newspaper and a large number of eminent musicians were his close friends. The Allgemeine Musik Gesellschaft of Zurich had a high opinion of Billroth's musical views, which were often asked for.

Billroth was a gifted pianist and he learned the viola from Eschmann. He played the viola in company with professional musicians. He cultivated chamber music also in Vienna and often played at his home in Alser Strasse with his friends. In a manuscript of 250 pages found in his desk he had written, two days prior to his death the following words: "This manuscript should be handed to my dear friend Hanslick who is to decide about it according to his judgment. The manuscript appeared in book form in 1898 with the title *Wer ist musikalisch* with a foreword by Hanslick. Billroth composed several songs, which however remained only in manuscript with the exception of one *Todessehnsucht* which was published after his death as a supplement to *Freie von Theodor Billroth*."

According to Tibor Gyori, teacher of medical history at Budapest, Billroth composed also a one act opera, which was performed at his home before an audience of distinguished friends. Of the 442 letters collected and published in 1895 in Hanover, Billroth wrote thirty-five to Brahms, twenty-nine to Hanslick and the rest to prominent medical men.

In 1867 Billroth occupied a professorial chair in Vienna, where Brahms had already moved. June 2, 1867, he wrote to Lübke: "I am every day in the company of Brahms." December 24, he wrote: "Brahms is ever more and more amiable." In 1867, Billroth resolved with Brahms to spend some weeks in Italy. About this excursion Brahms recorded the following episode: "When they were on a boat going from Naples to Sicily, a woman passenger was suddenly beset with labor pains. The captain knowing that Billroth was on the boat, asked him to give medical attendance to the woman. Billroth wavered a bit, saying he had no obstetric experience, but he proved to be an excellent obstetrician in this case and he himself was amazed at his success."

Billroth became in Vienna the subject of great admiration. The busy professor, however, could spare time every evening to meet his musical friends. In 1877 he wrote to Brahms:

"My relation with the goddess *Musica* has slackened lately, owing to my many official and medical activities. Now that I am on a holiday I start a new relation with her. I brought with me my upright piano, all your songs and other notes, and I greet you through the mountains." In 1885 he wrote: "I am dissatisfied with myself that I pay less and less attention toward the Muses. Of course, they remain ever young while I. I am sorry to say, get elder from year to year." That he still used his piano is shown in a letter written to Hanslick in which he informed him with great pleasure: "Tonight we made with Fraulein Erna von Bamberger a four hand revel. Within two hours we ran through Tschikowsky's two big orchestral scores and Fuchs's *Glimmer*."

Billroth's devotion to Brahms increased. When on Nov. 6, 1890 he had Brahms's new G flat quintet with two violas he went to his desk at 1 o'clock in the morning and wrote: "The greater part of the time of your budding I lived with you and I often meditated about what is real happiness. Well, tonight, listening to your music I was happy. This stands quite clear before me." Brahms met his musical friends in the *Igel*, a restaurant in Vienna. In his advanced age he willingly accepted invitations to dinners. He enjoyed good foods, particularly if good wines were served. Ehrbar, the Vienna piano manufacturer celebrated every birthday of Brahms, May 7, by arranging an asparagus breakfast. Among the guests were all the most intimate friends of the master, and Billroth, Hanslick and Goldmark were never missing. The breakfast was served at noon. Although the piece de resistance was the asparagus, which was served abundantly, there was plenty of ostrich and caviar and *Veuve Clicquot* champagne.

In 1892 Billroth felt the onset of symptoms of arteriosclerosis. He wrote to Brahms: "For three days I have again felt worse and until the end of the week I have to dose myself with digitalis." Yet his love of music held fast and in the same letter he said: "Yet I occupied myself with your music more than ever, all your four hand notes were with me and I played them in company with Dr. Fleischl of Rome." The disease, however, disturbed the strong body of the great genius more and more and Billroth's capacity began to drop in every direction. Four weeks prior to his death Billroth wrote to Professor Czerny, operative surgeon of the Heidelberg university: "If I live I shall open the new clinic in the autumn of 1895 and then in the course of the next year I shall retire. But with my ever increasing heart weakness I doubt whether I shall live to that time. I am resigned to anything. I am prepared for

the road." Jan. 12, 1894, he wrote to Brahms (the four hundred and forty-first letter): "In spite of the admirable weather I feel unwell. I cannot sleep and I have difficulty in breathing. Besides my broodings I have no recreations." This was the last letter addressed to Brahms and in spite of his condition he contemplated at length the national German dance music and German folk songs.

Billroth closed his eyes forever, February 8. In 1880, he wrote to Brahms on the occasion of the burial of a friend: "I should not like to cause obstruction in bustling Alser Street. I wish to be carried into the Central cemetery without music, in a simple way. There some music, a few words at the grave by one of my friends or pupils, again some music." However, Billroth's burial took other course. A huge mass of people blockaded the traffic the entire way. Brahms wrote to his friend Widmann about the burial: "In the innumerable mass of men there was not one curious or indifferent face only sympathy and love." Brahms was much affected by Billroth's death and three years afterward he also died. March 7, 1897, Brahms appeared at a philharmonic concert in Vienna. The first number of the program was his fourth symphony which was a great success. Brahms, who had been sitting in the background, came forward to receive an ovation. As Hanslick wrote: "Devotion and sympathy suffused the whole audience a clear presentiment of the fact that in this hall the Master was being greeted for the last time." From this time on Brahms's condition became worse from day to day and on April 3 he died.

He was buried in the Vienna Central Cemetery in the vicinity of Schubert's grave close to the mound of Beethoven. One of his biographers remarked: "His soul flew into the sunlit home whereto prior to him, in quick succession, went Hans von Bulow, Teodor Billroth and Klara Schumann, three people who stood nearest to his heart."

Marriages

ROBERT LANE WARE, A Surg. Lieut. (j. g.) U. S. Navy, to Miss Mary Fairfax McCallie at Chattanooga, Tenn., in August.

RAYMOND HARRISON RIGDON, Durham, N. C., to Miss Mary Anita Stigers of Atlanta, Ga., October 2.

FRED ARNOLD KENNEDY, Sacaton, Ariz., to Miss Lilian Emeline Ball of Cohasset, Mass., October 17.

ERNEST WILLIE GRUMBLES, Cristobal, C. Z., to Miss Ella Pattee of Little Rock, Ark., September 15.

ROBERT EDWARD LEE GUNNING, Galesburg, Ill., to Miss Jean Zearing of Princeton, October 7.

SAMUEL RALPH TERHUNE to Miss Pauline Carolyn Veitch, both of Birmingham, Ala., October 14.

JAMES CARLISLE MOORE, JR., Marion, S. C., to Miss Evelyn Brabham at Bamberg, August 5.

WAITER PERCIVAL RHYNE, Albany, Ga., to Miss Myrtis York of Clarksville, October 4.

WILBUR P. BAILEY, Philadelphia, to Miss Margaret Robinson of Paoli Pa., October 28.

FLETCHER ADRIAN SMITH, Elberton, Ga., to Miss Nell Wilson of Vidalia, October 1.

RAY VOIZESKE KING to Miss Mary Rose Sherburne, both of Peoria Ill., August 24.

JOHN COUDON STAGEMAN, Detroit, to Miss Leola Francis at Waterford, August 19.

HERMAN C. CLAYTON, Sidney, Ohio, to Miss Gladys Pardee, in Cincinnati, August 6.

ROBERT ALEXANDER ROSS, Durham, N. C., to Miss Rosalie Walter, October 4.

CHARLES FRANKLIN MOHR, Baltimore, to Miss Mary Caroline Hood, July 1.

Deaths

John Speese * Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1902, associate professor of surgery, University of Pennsylvania Graduate School of Medicine formerly assistant professor of surgical pathology at his alma mater, member of the American Surgical Association, fellow of the American College of Surgeons, aged 53, on the staffs of the Children's Hospital and the Presbyterian Hospital where he died, October 15, of coronary occlusion

John Dean Elliott, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia, 1901, clinical professor of surgery at his alma mater, fellow of the American College of Surgeons, served during the World War surgeon to the Hahnemann and Woman's Southern Homeopathic hospitals and the Abington Memorial (Pa.) Hospital, aged 57, died October 8

Andrew Curtin Santee, Middletown, N Y, Jefferson Medical College of Philadelphia, 1886, member of the Medical Society of the State of New York, member of the board of education and health officer of the towns of Wallkill and Wawayanda, on the staff of the Horton Memorial Hospital, aged 69, died, October 16, of carcinoma of the prostate

Oliver Rowland Blanchard * Jersey City N J, University of the City of New York Medical Department, 1891, past president of the board of education, one of the founders and president of the Fairmount Surgical Sanatorium, on the staffs of the Jersey City and St Francis' hospitals, aged 75, died, October 14, of heart disease.

William Benjamin Jackson, Cambridge, Mass Harvard University Medical School, Boston, 1880, member of the Massachusetts Medical Society, formerly member of the board of health of Lowell at one time on the staffs of the Lowell Corporation Hospital and the Lowell General Hospital, Lowell, Mass, aged 80, died, October 6

John Harvey Jewett, Canandaigua, N Y, College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1879, member of the Medical Society of the State of New York, on the staff of the Thompson Memorial Hospital, aged 79, died, October 14, of heart disease

Andrew Victor Sykes, Winnipeg, Manit, Canada University of Toronto Faculty of Medicine, 1924, served during the World War, on the staffs of the Children's Hospital of Winnipeg and St Boniface (Manit) Hospital, aged 36, was killed, August 13, in an automobile accident

Joseph Aloysius Mehan * Lowell, Mass, Tufts College Medical School, Boston, 1906, member of the New England Roentgen Ray Society and the Radiological Society of North America on the staff of St John's Hospital, aged 56 died October 12, of hypernephroma

Joseph C Brookhart, Oak Forest, Ill, St Louis College of Physicians and Surgeons, 1903, member of the Illinois State Medical Society, on the staff of the Cook County Tuberculosis Hospital, aged 53, died suddenly, October 17, of heart disease.

Albert Okerstrom, Berkeley, Calif College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois 1905 also a minister, aged 62, died September 20, in the University of California Hospital, San Francisco

George Hutchins McNemer * Cairo Ill, University of Louisville (Ky) School of Medicine 1889 past president of the Alexander County Medical Society formerly on the staff of St Mary's Hospital, aged 67 died suddenly October 18

Henry Berrien Shaw, New York College of Physicians and Surgeons Medical Department of Columbia College New York, 1877, member of the Medical Society of the State of New York, aged 82, died, October 10, of chronic endarteritis

Rudolph A Rulmann * Munster Ohio Medical College of Ohio Cincinnati 1881 past president of the Auglaize County Medical Society member of the county board of health aged 73 died October 7, in St Rita's Hospital Lima of uremia

John Bernard Stackable Fort Worth Texas Fordham University School of Medicine New York 1912 member of the Medical Association of Texas served during the World War aged 59 died September 22 of chronic polyomyelitis

James Walter Rendleman * East St Louis Ill Jefferson Medical College of Philadelphia 1894 past president of St Clair County Medical Society on the staff of St Mary's Hospital, aged 65 died October 13 of heart disease

Lewis Heisler Ball, Marshallton, Del, University of Pennsylvania School of Medicine Philadelphia, 1885, member of the Medical Society of Delaware, formerly United States Senator, aged 72, died, October 18, of pneumonia

Benjamin Franklin Carr, Polo, Mo University of Missouri School of Medicine Columbia 1880, Jefferson Medical College of Philadelphia, 1886, member of the Missouri State Medical Association, aged 81 died, September 21

Olander E Wald * Los Angeles College of Physicians and Surgeons of Chicago School of Medicine of the University of Illinois, 1898 formerly on the staff of the Lakeview Hospital Chicago, aged 65, died, September 16

Edward Mayo Anderson, New Orleans Tulane University of Louisiana School of Medicine New Orleans 1932 aged 27, on the staff of the U S Marine Hospital, where he died August 29 of subacute endocarditis

Ray C Ash, Ashland, Ohio, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois 1904 served during the World War aged 53 died October 15, of chronic nephritis

Joseph Redmond Condon * Des Moines Iowa Northwestern University Medical School, Chicago 1908 aged 52 on the staff of the Mercy Hospital, where he died, October 12, of cardiorenal vascular disease

Frank Henry Wheeler * New Haven, Conn Yale University School of Medicine, New Haven, 1882 past president of the Connecticut State Medical Society aged 77, died, October 10 of carcinoma of the cecum

James Edgar McKinney, Chesnee S C Chattanooga (Tenn) Medical College 1898, member of the South Carolina Medical Association, aged 64 died September 7, in the Spartanburg (S C) General Hospital

Harlin Andrew Harris, Guadalajara Jalisco Mexico Syracuse (N Y) University College of Medicine 1903, chief surgeon to the Southern Pacific Railroad of Mexico, aged 52 died, July 7, of angina pectoris

John Dustin Howe * Tiffin Ohio, Toledo Medical College 1891 veteran of the Spanish-American War, aged 72 died, October 11 in the Mercy Hospital of uremia and hypertrophy of the prostate

Clarence A Rothwell, Mexico Mo, Missouri Medical College St Louis 1891 member of the Missouri State Medical Association, aged 67, died, September 30 of myocarditis and hypertension

George Livingstone Ellis, Middleboro, Mass Harvard University Medical School, Boston 1872, member of the Massachusetts Medical Society, aged 94, died, August 22, of arteriosclerosis

Amos Evan Ayler, Greencastle, Ind Southern Homeopathic Medical College Baltimore 1897, aged 62 died, October 14, in the Methodist Episcopal Hospital Indianapolis of heart disease

Matthew Alvin Barnes, Pardoe Pa, Western Pennsylvania Medical College Pittsburgh, 1893 member of the Medical Society of the State of Pennsylvania, aged 69, died August 25

Henry St George Strouse, Omaha Neb Hahnemann Medical College and Hospital of Philadelphia 1886 aged 65 died September 18 in the Douglas County Hospital, of myocarditis

James S Cobb, Odessa Del, Georgetown University School of Medicine Washington D C 1893 on the staff of the Kent General Hospital Dover aged 67 died September 28

George M Kelly, North East Pa Western Pennsylvania Medical College Pittsburgh 1888 aged 69 died June 1, in St Vincent's Hospital Erie, of uremia and prostatic hypertrophy

William Huffman Niles, Benton Tenn Atlanta College of Physicians and Surgeons 1913 served during the World War aged 46 was found dead September 21 of a gunshot wound

Ella Jane Fifeild, Tacoma Wash Cooper Medical College San Francisco 1883 formerly member of the board of education aged 82 died September 30 of carcinoma of the uterus

Marian Elizabeth Parker * Kalamazoo Mich Syracuse (N Y) University College of Medicine 1926 on the staff of the Borgess Hospital aged 38 died September 8 of pituitary tumor

John Page McMahan, Peoria Ill., Rush Medical College, Chicago, 1883, member of the Illinois State Medical Society, on the staff of the Proctor Hospital, aged 75, died, October 5

Alpha Manly Chase, Denver, Colorado School of Medicine, Boulder, 1894, member of the Colorado State Medical Society, aged 60, died suddenly, October 6 of heart disease

Marshall Orlando Terry, San Diego Calif., Homeopathic Hospital College Cleveland 1872, veteran of the Spanish-American War, aged 85, died October 11, of lobar pneumonia

Shaen Saurin Magan ☉ Covina Calif., College of Medical Evangelists, Loma Linda, 1921 member of the Radiological Society of North America, aged 37, was drowned, August 31

Roswell Wetherbee, Belmont Mass., Harvard University Medical School, Boston 1882 member of the Massachusetts Medical Society, aged 75, died July 1, of cerebral hemorrhage

Byron J Murray, Saratoga Springs, N. Y. University of Michigan Medical School Ann Arbor 1876 aged 83 died September 22, of cerebral hemorrhage and arteriosclerosis

Alfred Maucotel, Bry City, Mich., School of Medicine and Surgery of Montreal, Que. Canada 1877 aged 83 died October 16, in the Mercy Hospital, of pyelonephritis

Eugene Harp Dunn, Houston Texas, Texas Medical College and Hospital Galveston 1875 aged 84 died September 29, of cardiovascular nephritis and myocarditis

David Le May Mitchell, Cassville Mo. Atlanta Medical College, 1874 Hospital College of Medicine Louisville, Ky 1884, aged 84 died September 28 in Springfield

Cyrus Johnson McCombs, Matthews N. C. North Carolina Medical College, Davidson 1905 formerly health officer of Gastonia County, aged 53, died, September 27

Harry Norwood Street ☉ Lonoke Ark. Tulane University of Louisiana Medical Department New Orleans 1890 aged 65, died October 3, of chronic myocarditis

James Gordon, Columbia Mo. University of Missouri School of Medicine, Columbia 1881, formerly mayor of Columbia, aged 75, died, September 29, of pneumonia

Hilton A Vickers, Youngstown, Ohio, Columbus Medical College, 1884 aged 76 died August 23, of myocarditis, hypertrophic cirrhosis of the liver and arteriosclerosis

Henry Armistead Bullock ☉ Richmond Va. University College of Medicine Richmond 1912 aged 42 died, October 2 in St. Luke's Hospital, of intestinal obstruction

William Frederick Kaercher, Philadelphia Hahnemann Medical College and Hospital of Philadelphia, 1885 aged 73, died, October 13, of carcinoma of the prostate

George Arthur Dixon, Paris, France, College of Physicians and Surgeons, Medical Department of Columbia College New York, 1878 aged 76, died, October 14

Estus Leon Summers, Hattiesburg Miss., Memphis (Tenn.) Hospital Medical College, 1907 aged 52 died October 5, of hypertrophic cirrhosis of the liver

Howard A Long, Brickerville Pa., Baltimore Medical College, 1893, member of the Medical Society of the State of Pennsylvania, aged 61 died, September 14

John H Kiley, Blossburg Pa. Starling Medical College, 1886, member of the Medical Society of the State of Pennsylvania, aged 72, died, October 2

Harry M Weed, Watersmeet, Mich. Chicago Homeopathic Medical College, 1889 aged 72, died, October 10, in Rhinelander, Wis., of cerebral hemorrhage

William T Lovering ☉ Seattle, McGill University Faculty of Medicine, Montreal, Que., Canada, 1891, aged 65 died, September 20 following an appendectomy

Charles Henry Wilkinson, Denver Cleveland University of Medicine and Surgery 1897 aged 65 died, October 7, in St. Anthony's Hospital of carcinomatosis

George Sewell Clark, Hartwell Ga. Atlanta College of Physicians and Surgeons, 1899 formerly chairman of the board of education died September 25

Henry F Spillers, Dover Ark. (licensed Arkansas 1903) formerly superintendent of the Ohio Valley General Hospital, Wheeling, aged 53 died September 8

E. W. Dunn, Ferris Texas (registered by Texas State Board of Medical Examiners under the Act of 1907) aged 64, died, in October of heart disease

Lewis Henry Ferris ☉ Melbourne Iowa State University of Iowa College of Medicine Iowa City 1912 aged 52 died September 16 of multiple myeloma

William W Pritchard, Wichita Kan., University of Nashville (Tenn.) Medical Department, 1868, Civil War veteran, aged 93, died, September 6

James William Watts, Columbus Ohio, Medical College of Ohio, Cincinnati, 1880, aged 78, died, October 12 in a local hospital, of carcinoma of the face

Lyman G Hemenway, Sycamore, Ill. Bennett Medical College, Chicago 1877 member of the Illinois State Medical Society, aged 80, died, October 5

Lonam Samuel Johnston, Shreveport La., University of Pennsylvania School of Medicine Philadelphia 1907, aged 59, died June 11, of angina pectoris

Harris R Moore, Burlington N. C. Atlanta (Ga.) College of Physicians and Surgeons, 1899, aged 60, died, September 30, in the Ramey Hospital

John H Fritz, West Alexandria, Ohio Eclectic Medical Institute Cincinnati, 1881, aged 81, died, October 18 in St. Elizabeth's Hospital, Dayton

Edwin Adolphus Gillespie, Memphis, Tenn. Vanderbilt University School of Medicine, Nashville, 1880, aged 77, was found murdered, October 12

Webster C Montgomery, McLean, Texas Atlanta (Ga.) Medical College, 1895, formerly city and county health officer, aged 67, died, October 4

Charles Percy M McCall, Jr., Reidsville, Ga., University of Nashville (Tenn.) Medical Department, 1904, aged 53, was found dead July 23

Cornelius Wesley Hickman, Houston Texas, Eclectic Medical Institute, Cincinnati, 1884, aged 78, died, September 30 of heart disease

Daniel Buchanan, Galt, Ont., Canada, University of Toronto Faculty of Medicine, 1896, aged 64, died suddenly September 7, in Detroit

Clarence Joseph Beekley, Cincinnati Miami Medical College Cincinnati, 1901, served during the World War, aged 54 died, September 11

Lilburn Walter Huddle ☉ Rural Retreat, Va., Tennessee Medical College, Knoxville, 1907, aged 54, died, October 1, of cerebral hemorrhage

Robert Merritt Charlton, Hamilton, Ont., Canada Western University Faculty of Medicine, London, 1906, aged 56 died, September 4

Rufus Edwin Hagerthy, Sedgwick Maine Long Island College Hospital, Brooklyn, 1885, aged 74, died, September 3, of diabetes mellitus

Frederick Kilburn Priest, Nashua, N. H. University of the City of New York Medical Department, 1882, aged 73, died, September 28

Gordon Way Hoyt, Syracuse N. Y., Hering Medical College Chicago 1896, aged 60, died, October 8, of streptococcal meningitis

Noah Myers, Springfield Ohio Medical College of Ohio Cincinnati, 1887, aged 74 died suddenly, October 13, of cerebral hemorrhage

Roy Leon Chambers ☉ Sardina Ohio Starling Ohio Medical College, Columbus, 1909, aged 48, died, October 16, of heart disease

Vestus E D Casselman, Vancouver B. C., Canada Manitoba Medical College, Winnipeg, 1897, aged 63, died September 16

Warren Edward Hillyer, Boulder, Colo. Keokuk (Iowa) Medical College, 1898 aged 61, died suddenly, October 14, of heart disease

Alfred E Long, Vancouver B. C. Canada University of Pennsylvania School of Medicine, Philadelphia, 1882, aged 84, died July 26

Roger Sherman Tea, Lafayette Ind. Rush Medical College Chicago 1886 aged 75 died October 2, of cerebral hemorrhage

George H Mathews, Union Springs, N. Y. Baltimore Medical College 1884, aged 88, died, July 21 of chronic endocarditis

Jesse Bell Holt, Culver City Calif. Woman's Medical College of Pennsylvania Philadelphia 1884 aged 75, died July 16

William Jenkins Fernald, Ontario Calif. Rush Medical College Chicago, 1890, aged 69 died in October of heart disease

George Robert Connally, Wichita Falls Texas, nongraduate aged 80 died July 23 of cholecystitis

Bureau of Investigation

BEER AND ALCOHOL

Some Alcoholic Percentages in Beers on the American Market

The passage this spring of an act to provide revenue by the taxation of beer and the coincident repeal of certain paragraphs in the National Prohibition Act so as to permit the legal manufacture and sale of beer containing not more than 3.2 per cent of alcohol by weight have stimulated public interest in the subject of alcohol percentages in American beers. At the time the act was passed it was freely stated, and the claim is still heard, that beer containing 3.2 per cent of alcohol by weight (which is about 4 per cent by volume) must be a pretty "weak" affair, and in no way comparable to the general run of beers legally sold in the United States prior to the adoption of the Eighteenth Amendment to the Constitution. It has also been suggested that the "new" beer does not even contain the amount of alcohol that the modification of the law permits—in other words, that the beer put on the American market does not contain 3.2 per cent of alcohol by weight. This rumor is given further weight by the fact that the declaration of alcohol content, which the National Food and Drugs Act requires, does not state "Contains 4 per cent of alcohol by volume," but instead, more ambiguously declares "Contains not more than 4 per cent of alcohol by volume."

In view of the vagueness in the public mind—not wholly confined to the nonmedical part of the public—regarding the alcohol content of beverages, it may be of interest to call attention to certain fundamentals underlying the problem. At the outset, it is to be remembered that the National Food and Drugs Act requires the declaration of the presence and amount of alcohol in all drugs and beverages containing that substance. The law further requires that such figures shall be expressed in percentages by volume—not by weight—and also in percentages of *absolute* alcohol. This fact should be borne in mind, because in Canada and Great Britain the alcohol content of beverages is usually declared in terms of proof spirit, which is one half the strength of absolute alcohol. Thus the beers legally sold in taverns in the Province of Ontario and advertised as "4% by volume" are, if expressed in the terms required by our Food and Drugs Act, actually 2 per cent by volume.

The reason the new law uses weight instead of volume as the unit of alcoholic strength is probably to be explained on political and psychological grounds. Those desirous of legalizing the manufacture of beer containing a higher percentage of alcohol than the one-half of one per cent designated under the National Prohibition Act were undoubtedly aware of the ignorance of the general public of the differences between percentages by weight and percentages by volume. It might have been more difficult to get the necessary legislation to permit the manufacture of beer containing 4 per cent of alcohol by volume than it was to get the same legislation to permit the making of beer containing 3.2 per cent of alcohol by weight—although as a matter of fact, the latter represents a slightly higher percentage of alcohol than the former. The following alcoholometric table, from 1 per cent to 10 per cent by volume taken from the United States Pharmacopoeia, will give some idea of the differences between percentages by volume and percentages by weight.

ALCOHOL BY VOLUME		ALCOHOL BY WEIGHT
1 per cent	=	0.795 per cent
2 per cent	=	1.593 per cent
3 per cent	=	2.392 per cent
4 per cent	=	3.194 per cent
5 per cent	=	3.998 per cent
6 per cent	=	4.804 per cent
7 per cent	=	5.612 per cent
8 per cent	=	6.422 per cent
9 per cent	=	7.234 per cent
10 per cent	=	8.047 per cent

Prior to the national prohibition law, the better known American lager beers declared the presence of between 3.5 and 4.5 per cent absolute alcohol by volume. Bringing the facts down to date, there is published by the New Hampshire State Board of Health, in its *Monthly Bulletin* for October, this year, a list of beers, the sale of which has been legalized by that state, together with the percentages of alcohol found by recent analyses to be in such beers. The following products and figures are taken from the New Hampshire *Bulletin*. In some instances more than one analysis was made with slightly varying results. In such cases, instead of giving the individual alcohol percentages by volume in each analysis, the figures given have been averaged.

	Alcohol per cent by volume
Banquet Ale (Narragansett Brewing Co.)	4.00
Bass Ale (Read Bros. Ltd.)	3.82
Blue Ribbon (Premier Pabst Corp.)	3.88
Boston Stout (Commercial Brewing Co.)	3.55
Budweiser (Anheuser Busch Inc.)	3.84
Burgomaster (Fitzgerald Bros. Brewing Co.)	3.57
Connecticut Valley Ale (Connecticut Valley Brewing Corp.)	3.96
Connecticut Valley (Connecticut Valley Brewing Corp.)	3.89
Dawson's Diamond Ale (Dawson's Brewery Inc.)	3.84
E. B. C. Portsmouth Ale (Eldredge Brewing Co. Inc.)	4.10
Edelbrau German Lager (Edelbrau Brewing Co.)	3.86
Genesee (Genesee Brewing Co.)	3.34
Gilt Edge Stock Ale (Cold Spring Brewing Co.)	3.64
Golden Rod Lager (Hittleman Golden Rod Brewing Co. Inc.)	3.80
Gold Medal (Munich's Brewery Inc.)	3.79
Gold Medal (Stegmaier Brewing Co.)	3.64
Haffenreffer's Lager (Haffenreffer & Co.)	3.94
Hampden Ale (Hampden Brewing Co.)	1.92
Hampden Lager (Hampden Brewing Co.)	3.63
Horton Pilsener (Horton Pilsener Brewing Co. Inc.)	3.66
Harvard Draft Lager (Harvard Brewing Co.)	3.64
Heineken's Dutch (Heineken's Breweries)	3.57
Heineken's Lager (Heineken's Breweries)	3.46
High Life (Miller Brewing Co.)	3.84
Kings (Kings Brewery Inc.)	3.49
King's Special Ale (King's Brewery Inc.)	3.61
Liebotshauer (Genesee Brewing Co.)	3.84
Liberty (American Brewing Co.)	3.98
Michel Pilsener (Michel & Ebling Brewing Co.)	3.72
Narragansett Lager (Narragansett Brewing Co.)	3.52
Old England Ale (Old England Brewing Co.)	3.93
Old Heidelberg (Harrison Beverage Co. Inc.)	3.39
Old Heidelberg Pilsener (Union City Brewing Co.)	2.97
Old Homestead Ale (Commercial Brewing Co.)	3.71
Ortleib's Lager (Henry F. Ortleib)	3.29
Paramount (North American Brewing Co.)	3.69
Pickwick Ale (Haffenreffer & Co.)	3.80
Pico Pilsner (Pilsner Products Co. Inc.)	3.74
Piel's Dark Lager (Piel Bros. Inc.)	3.85
Piel's Light Lager (Piel Bros. Inc.)	3.88
Rheingold (Liebmann Breweries Inc.)	3.73
Schlitz (Schlitz Brewing Co.)	3.36
Seitz (Seitz Brewing Co.)	3.42
Standard (Standard Brewing Co.)	3.49
Stegmaier's Porter (Stegmaier Brewing Co.)	3.35
Stegmaier's Select (Stegmaier Brewing Co.)	3.63
Stegmaier's Stock Lager (Stegmaier Brewing Co.)	3.66
Tip Top Lager (Trainer Brewing Co.)	3.80
Utica Club Brew (West End Brewing Co.)	3.68
Wehle Ale (Wehle Brewing Co.)	3.20
Wehle Lager (Wehle Brewing Co.)	3.56
Whitbread Pale Ale (Whitbread & Co. Ltd.)	3.87

The analyses of these fifty-two brands show the average alcoholic strength to be 3.68 per cent by volume.

An Ultramicroscopic Living Thing—Yellow fever is caused by a virus, an ultramicroscopic living thing that has never yet been seen. Able to pass through the closest of filters, it has been known to penetrate the skin of a man's hand and infect him with the disease. Despite this penetrative power the disease is not ordinarily acquired by contagion, being like many other diseases, spread through the agency of an insect host. The host a mosquito, bites an infective man and twelve days later becomes infective itself and remains so for the remainder of its life, which may last for some months. At any time during its infective period the mosquito has only to bite a human being once for the virus to be passed back from its insect to its human host and for the disease to spread. —Still John. The Significance of Yellow Fever, *J. Royal Army Med Corps* 61:268 (Oct.) 1933.

Correspondence

MALNUTRITION IN CHILDREN

To the Editor—I have just read your editorial October 21, on malnutrition in children. Since the Washington meeting, October 6, I have been looking into this question in the dispensary and children's wards of the Philadelphia General Hospital, where I find from records of social workers and dispensary physicians, and in my wards, that there is distinctly less malnutrition in children than there was in much better times. So far, there has been only one true case of malnutrition in the wards this month which is distinctly unusual.

Most of our patients come from homes that are being supplied with food from different agencies in the city, and my feeling is that the children are getting much more nourishing food than they had obtained when the parents were self supporting and supplying much unnecessary and faulty foods. In my own practice I have not seen any cases of malnutrition even when the parent or parents have been out of work or had only enough work to supply the absolute necessities of life. I feel that it is entirely wrong to make so much hullabaloo about something which does not exist.

THEODORE LEBOUTILLIER, M.D., Philadelphia

ABORTIONS IN RUMANIA

To the Editor—I was greatly surprised to read in the Bucharest letter (THE JOURNAL, September 2 p. 792) that the number of abortions registered in statistics is about 60,000 a year. I will not discuss the figure although my associates and I are the only ones in Rumania who could be well aware of the actual number. I have no idea as to the number of abortions that take place here. Two expressions of a contradictory nature—"secret abortions" and "late statistical reports"—are used by the correspondent.

The causes of death registered according to the International List give the following data for 1931 and 1932:

	Total Deaths in Rumania	Number of Females Between 14 and 45 Years Dying from All Causes	Total Female Deaths from Puerperal Causes
1931	380 251	30 543	2 389
1932	399 346	28 653	2 889

S. MANUILA, M.D., Bucharest, Rumania
Director of the Institute of Demography and Census

SPRAY RESIDUE POISONING FROM STRING BEANS

To the Editor—Spray residue poisoning, in man, occurs with some frequency. A recent instance in San Francisco is worthy of note.

Mrs. M., a housewife, served a meal consisting of string beans, summer squash, boiled rice, dried cooked peaches, and, to one individual only, broiled steak. Seven people including three children of 10, 6 and 2 years, and four adults were served. Mrs. M. was the only one affected, but also she was the one of the group who ate an additional portion of the string beans, an incident occurring about one hour after the meal. Physical signs and symptoms complained of included nausea, vomiting, diarrhea, headache, abdominal pain and "dark spots before the eyes." The disturbance endured through three days for forty-eight hours.

Samples of the beans were obtained from the market and were prepared in the same aluminum vessel as before and chemical studies revealed lead to the quantity of 117 mg. (0.0117 Gm.) per hundred grams of beans but no arsenic. Three other samples from the market showed no lead or arsenic.

Quantities of the beans sold were procured by the market from two different sources on two successive days, so that it was impossible to trace the responsible lot.

From the amount of insecticides sold per capita annually, it would appear that relatively enormous quantities are used. Heavy spraying might easily permit the quantity of residue to exceed the rather wide margin of safety for human consumption. The possibilities are minimized, of course, by the supervision offered by the Bureau of Entomology and Plant Industry of the United States Department of Agriculture and by state departments of agriculture. It is to be remembered, however, that the uninformed truck farmer, to insure an effective dose of insecticide, may spray his vegetables heavily. If the housewife is not extremely cautious in washing the spray residue from the vegetables before cooking, a case of poisoning may easily result.

J. C. GEIGER, M.D., San Francisco
Director of Public Health

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

HYPERHIDROSIS, OR EXCESSIVE PERSPIRATION

To the Editor—A youth aged 19, height 5 feet 8 inches (1.77 cm.), weight 152 pounds (69 kg.) of normal bodily development complains that for the past four years he has been bothered with excessive perspiration. Irrespective of the surrounding temperature, winter or summer, he perspires so freely that his clothing becomes soaked through in a short while. It has become so severe that it practically bars him from any form of social activity, such as dancing, unless he was to change his clothing several times during an evening. He drinks large quantities of water. The perspiration is generalized over the body surface, head and scalp. The past history and physical examination are entirely negative. He has an older sister, aged 28, with diabetes mellitus. Routine blood examinations and urinalysis are within normal limits. The Kahn and Wassermann tests of the blood are negative. His only other complaint is an occasional frontal headache. A course of several intra-muscular injections of solution of pituitary produced no appreciable effect on the thirst or perspiration. The patient is becoming quite despondent over the situation and is willing to try any measures to check this condition. Kindly omit name.

M.D. Illinois

ANSWER—Many of the causes of generalized hyperhidrosis can be ruled out in this case by the description given, but a few remain as possibilities: Malaria, hyperthyroidism, hyperglycemia, persistent, nonprogressive brain lesion or a neurosis based on fear may be considered.

Periodicity in the attacks would suggest malaria. Hyperthyroidism should have produced symptoms recognizable in the general examination. If any suspicion of this disorder can be entertained, an estimation of the basal metabolism should be made. Evidence is wanting of direct causation of hyperhidrosis by disturbances of the pituitary gland, but excessive sweating occurs at times in gigantism probably from the accompanying hyperthyroidism. Hyperglycemia, too, may be secondary to pituitary disease. Urinalysis should be repeated and the blood sugar estimated before it can be excluded.

Hyperhidrosis has often been reported in cases of dementia paralytica, myelitis, injury or tumor of the brain. In spite of the fact that the condition has been present for four years without causing any other symptom, this possibility should be ruled out by careful examination, including examination of the eyegrounds. There have been a number of cases of self-limited general hyperhidrosis reported in which no etiologic factor could be found. The theory has been offered that they were due to a temporary vasomotor disturbance in the corpus striatum or hypothalamus consequent on some infective process.

If no etiology can be discovered, empirical treatment might well be instituted by putting the patient in the hospital, cutting down water and salt to the minimum and recording the amount of perspiration. It must be remembered that the loss of water and salts in the sweat causes hypochloremia, so that the hyperhidrosis patient needs more salt than a normal person. If this does not break the cycle, the remedy most likely to give relief is atropine administered in increasing doses until the desired effect is obtained or signs of intolerance appear.

An old wives' remedy, sage tea, is recommended by good German authority as having succeeded in some cases. It must

be given in large amounts, and after it has been used for several weeks it should be stopped for a few days to prevent loss of effect and then resumed. Other authorities report success for sulphur in doses of 4 Gm morning and evening. Still others report good results from camphor in pills coated to prevent solution in the stomach. Other patients have been benefited by iron, some by ergot, a number by arsenic.

The use of external applications is sometimes indicated as an adjuvant. One per cent solution of liquor formaldehydi in water is the most generally useful. One per cent alcoholic solution of quinine has succeeded in some cases, probably those resulting from malaria.

DWARFISM

To the Editor—A boy was brought to my office a few days ago with I believe some type of glandular disturbance possibly an insufficiency of the anterior pituitary. The child is now 13 years old, height 45 inches (114 cm) and weight 48 pounds (22 kg). He was a full term baby, born after a long labor with forceps delivery and weighed 5 pounds (2.3 kg) at birth. He was breast fed until 18 months old. He cried a good deal until he was about 3 months old. He was apparently a normal child according to his mother until he was 4 years old and then he just seemed to stop growing. There is no history of convulsions or illness of any kind in early infancy. He had measles four years ago, mumps three years ago and acute bronchitis one year ago. There is nothing in the family history of importance. There is one other child in the family, a girl of 10 who is apparently normal and in good health. There is no one on either side of the family of small stature. Physical examination is negative except for his stature. The size of his chest and abdomen is possibly a little out of proportion to the remainder of his body. He appears to be thick and fat through the chest and abdomen. Otherwise the relationship in size between the head, extremities and trunk is normal. There is apparently no disturbance in the secondary sex characteristics. His progress in school has been satisfactory and there is apparently no mental retardation. Can you offer any suggestion as to the possible diagnosis and is there any glandular therapy that might prove of value in this case? Can you give me any reference to the literature? Please omit name and address.
M D Texas

ANSWER—The history of this case and an examination of the photographs submitted suggest dwarfism. The patient described in the query progressed normally until he was 4 years old and then ceased growing. This type has been referred to as the infantile variety. Growth continues for a certain period and ceases some time between childhood and puberty. Such an individual may become a man in miniature. Paltaut in 1891 called attention to another variety, the primordial type of true dwarfism. These are congenital dwarfs. They may take on growth acceleration in adult life. Thus it is recorded by Paltaut that two dwarfs increased in height as late as their thirtieth year. In most of the cases belonging to the primordial group the intelligence remains normal. The etiology is obscure, though retardation in development of the epiphyses persists and seems in some way to be associated with the failure to grow.

Pituitary preparations have been employed to a considerable extent in the treatment of dwarfism. It is difficult to say whether observations of accelerated growth are due to pituitary medication or are simply spurts in growth, which take place even in untreated cases. It has been suggested that, if results are to be obtained, large doses of the preparations should be used—as much as from 2 to 4 Gm a day.

In several laboratories the growth fraction of pituitary extracts in concentrated form have been isolated. Thus Shelton of Santa Barbara has recently treated a midge by giving Evans growth hormone hypodermically.

A discussion of dwarfism may be found in any of the recent textbooks on medicine or pediatrics and it is also considered in Englebrich's *Endocrine Medicine* published by Charles C. Thomas in 1932. R. G. Hoskins, *The Tides of Life* published by W. W. Norton & Co. in 1933, and W. Falta's *Endocrine Diseases* translated by M. K. Meyers in 1923.

WATER HEMLOCK POISONING

To the Editor—In *THE JOURNAL*, September 9, there is a clinical report of a case of water hemlock poisoning by Dr. M. M. Miller of Akron, Ohio. I have a vague recollection that several years ago *THE JOURNAL* published the experience of a physician in the management of a large number of victims of intoxication by the same plant in a public institution for children. As young persons seem to be the common victims of innocent eating of the widespread *Cicuta* genus, I opine that other readers would be glad like myself to have references to the subject.

M D Connecticut

ANSWER—The communication to which our correspondent doubtless refers was a report of seventeen cases of poisoning with water hemlock (*Cicuta maculata*) published in some detail by the late Prof. Louis A. Gompertz, M.D. of the Yale University School of Medicine (*THE JOURNAL*, Oct. 16, 1926, p. 1277). It dealt with a group of boys, inmates of a county home who

had been taken suddenly ill after partaking of the leaves or flowers and, in a few instances, of the roots of water hemlock growing in a swamp adjoining the children's playground. All those who had eaten root stocks became ill, with accompanying convulsions. The symptoms otherwise resembled those described by Miller. All of Dr. Gompertz's seventeen patients recovered. The treatment consisted of gastric lavage and high enemas. After the stomachs of all were evacuated it became necessary, in some instances, to administer morphine hypodermically. Active purgation was initiated in each child. Otherwise, they were treated symptomatically. Dr. Miller employed sodium amylal, 0.2 Gm, administered intravenously, to overcome the alarming convulsions.

Extensive references to the literature of poisoning with *Cicuta* will be found in Dr. Gompertz's paper. It is evident that water hemlock is highly poisonous at all times. The problem of prevention emphatically presents itself. Attention should be called to the widespread menace of the plant. Eradication procedures ought to be inaugurated so thoroughly in all neighborhoods where children, the usual victims, are likely to play that the future possibility of poisoning by *Cicuta maculata* will be reduced to a minimum. Its habitat is among swamps, frequently it is found along irrigating ditches and wild meadows.

ENCEPHALITIC PARKINSONISM

To the Editor—I have a patient who suffered from epidemic (lethargic) encephalitis about ten years ago. Since his recovery he has been suffering from paralysis agitans. Two years ago he came to me for treatment and I gave him tincture of stramonium, 10 drops three times daily. This dosage had to be increased to 30 drops and even more. I stop this treatment for intervals of two weeks but he seems to have developed such a tolerance for the drug that even more than 30 drops three times daily does not seem to help. Kindly let me know whether there is anything new that could be used. His age is 28 years.

SAMUEL ZEAVIN, M.D. Austin, Minn.

ANSWER—It is difficult to recommend something new when none of the new remedies recommended for encephalitic parkinsonism are as good as stramonium, atropine and scopolamine hydrobromide. The latter is usually the most efficient drug. It is well to begin with 0.3 mg three times a day and gradually increase the dose as needed. In addition to this a course of intravenous injections two or three times a week for a month or two of sodium cacodylate may be beneficial. It is well to begin with 0.3 Gm and gradually increase the dose to 1.3 Gm. If the scopolamine should prove ineffective, it would be safe to increase the dose of tincture of stramonium to double the amount stated. The powdered leaf in capsule may be more effective, beginning with 0.13 Gm three times a day.

ACCUMULATION OF TARTAR ON TEETH

To the Editor—What causes an excessive accumulation of tartar on the inside of the lower front teeth which returns soon after prophylaxis? A man aged 40 has chronic tuberculosis of long standing. He has obstinate constipation for which he has taken psyllium and a daily dose of two teaspoonfuls of magnesium magna for several years. There is no apparent lack of salivary secretion. Nearly all the teeth are present, apparently in good repair. He is a mouth breather. A reply will be appreciated.

M D, North Carolina

ANSWER—Some authorities believe that from 90 to 95 per cent of all pyorrhea can be regarded as a filth disease. The small minority is of constitutional origin. In evolution man has lost the art of vigorous mastication, a diet has been adopted that is for the most part made up of soft foods. If foods were hard and tough, the teeth would be cleansed and the gums vigorously massaged or stimulated during mastication. Since cleansing and massaging are not automatic now, it becomes necessary to supply both artificially. As a result, proper brushing of the teeth has become an important function. This fact is little appreciated by the dental profession as a whole, therefore it is not emphasized to the lay public. Unless much attention is given to the gums during tooth brushing, they become soft and spongy and as a result fit loosely about the necks of the teeth. Under such conditions it is not surprising to find tartar collecting on the necks of the teeth. Tartar is the result of the calcification of organic matter deposited on the teeth. It always consists of degenerated epithelial cells of the mouth mucous membrane, food debris, mucus of the saliva and various microorganisms of the mouth. In the beginning the formation consists of a soft film of the substance. These can easily be brushed away if done thoroughly and regularly every day. In this is collected the film made of a thin coating calcified by the inorganic salts of the saliva. Chemical analysis shows considerable variability in the composition of the film. In figures are a fair average: calcium phosphate 70 per cent, calcium carbonate 20 per cent, calcium fluoride and magnesium phosphate.

10 per cent, water and organic matter, 20 per cent. Hard tartar contains a much higher percentage of inorganic salts, soft tartar a higher percentage of organic matter and water. The tendency to tartar formation varies with individuals, also with age. The soft type predominates in youth and the hard type in older persons.

The accumulation of tartar can be controlled effectively by proper brushing. A thorough prophylaxis by a dentist is of limited benefit to the patient unless he knows how to follow up this service. There are two good reasons why tartar accumulates more readily on the inside of lower teeth than anywhere else. First this is the most difficult location to brush, second, the sublingual and submandibular glands are closest to these surfaces. If equally poor brushing were done on all other tooth surfaces, much tartar would gather there also.

The recommendation is that the patient acquire two good hard bristle tooth brushes and learn how to use them. By alternating morning and night the bristles have more time to dry out. Proper brushing essentially constitutes a vibrating motion with pressure rather than a long stroke motion which results in nothing more than brushing the high spots. *Cleaning agents are aids only if used in conjunction with a thorough brushing technique.* Tooth pastes do not as yet possess the magic properties that some advertisers would have us believe.

INSULIN AND UNDERWEIGHT

To the Editor—I have under my care a woman aged 20 who is about 30 pounds (13.6 kg.) underweight. She tried all sorts of tonics but could not gain. Physical examination is entirely negative except for the underweight. I put her on insulin 5 units three times a day. At first she responded to this treatment by getting hungry about thirty minutes after the injection but after five or six days this dose ceased to have any effect at all. The dose was then increased to 10 units three times a day. For the first few days she used to get hungry about thirty or forty minutes following the injection later the interval between the injection and the onset of hunger was prolonged to about eighty or ninety minutes and finally this dose failed to produce any hunger at all. I then started her on 20 units three times a day and for the first two or three weeks she reacted favorably by getting hungry but not until about ninety minutes following the injection. I now find that I have to give her at least 30 units in order to produce a hunger sensation and that only after eighty or ninety minutes. Kindly answer the following question: Do you consider such a long interval between the time of injection and the onset of hunger unusual? Do patients become tolerant to insulin and require larger doses when treatment is prolonged? 3. Is 30 units three or four times a day harmful in any way? 4. In the event that 30 units will soon fail to produce a hunger sensation would you advise increasing the dose to 40 or 50 units three times a day? 5. During the three months that she has been under insulin treatment she gained 14 pounds (6.4 kg.) without discontinuing her work as an office clerk. Is this the usual rate of gain in weight? What is the optimum rate of weight gain? I shall greatly appreciate your courtesy in this matter. Please omit name.

M D New York

ANSWER—Hypoglycemia following the administration of insulin to normal persons usually reaches its lowest point in from two to three hours. The sensation of hunger coincident with the lowering of the blood sugar although it may supervene when the blood sugar level has fallen as little as 10 mg per hundred cubic centimeters may be delayed until the sugar has approached its lowest levels.

The lowering of the blood sugar level evokes compensatory reactions within the organism which involve the utilization of the stored glycogen as a source of sugar with which to replenish the blood. In the undernourished person, in whom the compensatory mechanisms are hampered by lack of sugar stores, the hypoglycemic action of insulin is more precipitous than in the well nourished organism. The apparent increasing resistance of the patient to insulin is probably due to the improvement in her nutrition as a result of treatment. In the absence of complications such as infection diabetic patients receiving insulin over long periods do not develop any resistance to insulin.

The possible harm that might result from continued insulin administration in a normal person can be surmised only from certain theoretical considerations and, for the present at least may be neglected. However the increase in weight that occurs during insulin therapy is chiefly due to an increase in the food intake. Although water retention accounts for some of the gain in weight and while certain investigators have ascribed some of the benefit derived from insulin to its influence on the intermediary metabolic processes, the rationale of the treatment is mainly to improve the feeding habits. Since this patient has been receiving insulin for more than three months which should be a long enough period in which to establish improved feeding habits there seems little purpose in continuing the administration of increasing doses of insulin. Once a normal food intake has been established there is no more reason for inducing extreme hunger reactions at mealtime in such patients

than in normal individuals. In view of this and since most workers have not used more than 20 units of insulin three times a day in this work, it would seem advisable to discontinue the insulin in this case and observe what lasting effects have been obtained with it. It can be resumed later if necessary.

As compared to the experience of others, the gain of 14 pounds in three months is not excessive. Greater increases have been reported.

CONTAGIOUS AND INFECTIOUS DISEASES

To the Editor—Please distinguish between contagious and infectious diseases give definitions also examples with reasons. If smallpox is a contagious disease why is it not infectious? If malaria is infectious why is it not contagious?

THOMAS S. LEMING, M.D. Moberly, Mo.

ANSWER—The only distinction between contagious diseases and other infectious diseases lies in the manner in which the infecting agents are transmitted. Contagious diseases are infectious diseases that are spread to susceptible persons through contact with specific infectious material without the intervention of an intermediary host in which the infectious agent may undergo certain changes or stages in development. Smallpox, chickenpox, gonorrhea, syphilis, scarlet fever, measles, mumps, diphtheria, whooping cough, epidemic meningitis, puerperal fever, erysipelas and pneumonia are all examples of contagious diseases in this sense and they are all infectious diseases. Smallpox is an infectious disease. But not all infectious diseases are contagious in the sense just stated. Malaria, yellow fever, trypanosomiasis and Rocky Mountain spotted fever are not transmissible by simple contact with specific infecting material. These diseases are transmitted by the bite or sting of insects that carry the infecting agent and deposit it in virulent form in the tissues or blood of the victims. It is true that these diseases are communicable diseases, but not by simple contact, hence they are not contagious.

NECROSIS OF FAT TISSUE AFTER HYPODERMOCLYSIS

To the Editor—In January I saw a patient who had been having convulsions for several hours. A woman at full term was in a state of coma with elevation of blood pressure and pathologic kidneys, the typical picture of advanced eclampsia. I advised cesarean section immediately as she was at full term a primipara 34 years old and fetal heart sounds could be heard. A twin pregnancy was found a boy and a girl. The boy seemed to have been dead for several hours but the girl came through in good condition. The patient left the operating table in fair condition. A hypodermoclysis was ordered on her return to her room. My personal contact with the case terminated at this point for a period of several weeks. I understand that a hypodermoclysis of 5 per cent dextrose in physiologic solution of sodium chloride was given immediately after her operation and repeated eight hours later. About six weeks following her operation the woman consulted me with reference to a painful condition on both sides of the chest wall. On the right side a fluctuation area was found just below and posterior to the level of the breast. Marked tenderness was found over the same area of the other side but no fluctuation was found. I advised her to return to her local physician and consult him with reference to the matter which she did. A few days later she came back to me and the same condition persisted. I made an opening just below and slightly posterior to the breast and several ounces of straw colored fluid was removed. I saw the woman over a period of several months and it became necessary to make numerous openings on both sides of the chest wall below and posterior to the breast and extending down to the level of the umbilicus. Always the same character of fluid was found. A straw colored rather thick and sticky fluid was recovered but never at any time was pus found. The fluid was examined microscopically on numerous occasions and one culture was made but both procedures were negative for organisms. The skin was never involved. The pathologic condition was confined to the superficial tissue between the skin and muscles of the chest wall. All symptoms finally cleared up about eight or nine months after operation and the patient is entirely well except for a hernia in the upper portion of the incision in the region of the necrosis. Some controversy has arisen with reference to this matter and I was asked for an opinion as to the cause of the necrosis. My idea was that it was simply a fatty necrosis as a result of the hypodermoclysis being given either too hot or too strong. I say this because the necrotic area involved only that portion of the chest wall which is supposed to have absorbed the hypodermoclysis. Also it was not the marked localized necrosis which is usual from overdilatation of the tissues. Some expressions from you with reference to the causes of necrosis or any information you might give me would be greatly appreciated. Please omit name.

M D Mississippi

ANSWER—The inquirer is most likely correct in his assumption that the fluid was the result of necrosis of fatty tissue and that the necrosis was most likely due to the fact that the solution injected was too hot. De Lee (Year Book of Obstetrics and Gynecology by J. B. De Lee and J. P. Greenhill 1925, p. 213) reports such a case. The absence of more local and general symptoms, the negative cultures and the fact that the necrosis was bilateral all speak against an infection. If epinephrine was added to the solution before it was injected it may have caused the necrosis. Vignes (*J. d. praticiens* Jan 31 1925) reports a case in which complete necrosis of the mammary

gland followed a submammary injection of serum. The entire breast separated from the chest wall without bleeding. Vignes believed the necrosis was due either to epinephrine or to the fact that the serum was too hot. He has seen a number of sloughs follow injection of epinephrine in pregnant women. He emphasizes that in gravid women there is hyperactivity of the suprarenal glands and that, when additional epinephrine is injected into the body, necrosis may result from excessive vasoconstriction in the area of injection. However, while this is most likely true if only a small amount of epinephrine is used there is no harm, as evidenced by the fact that necrosis is rarely ever seen after the use of infiltration anesthesia. In practically all cases in which this form of anesthesia is used, some epinephrine is added to the anesthetic. In the case cited the patient's resistance was lowered considerably by the eclampsia and this may have played a part in the necrosis.

BLOOD TRANSFUSION IN SHOCK

To the Editor—What is the consensus as to the indication or contra indication of blood transfusion in a case of shock not due to hemorrhage? Recently there was a paper or an editorial in *THE JOURNAL* on shock in which this subject was discussed. Would you be kind enough to give me the reference?

MARTIN M. SHIR, M.D., Brooklyn

ANSWER—Blood transfusion is indicated when, as a result of an operation or trauma or burns or uncomplicated hemorrhage, the blood pressure remains depressed definitely below its normal level. If the blood pressure has remained at a very low level for several hours as a result of any of these causes the transfusion of blood may be without a sustained beneficial effect. The editorial on shock appeared in *THE JOURNAL*, January 7, page 46.

LATE EFFECTS OF TRICHINOSIS

To the Editor—A man aged 40 had a severe and typical attack of trichinosis in 1928. He had at that time an eosinophilia of 50 per cent. Some residual pains continued in the muscles of the extremities. Blood examination six months after the initial attack revealed an eosinophilia of 9 per cent. For more than four years there were no symptoms. Recent fleeting pains, at times very severe, have occurred in the extremities at times these were associated with some transient swelling. The character of these disturbances has been very similar to what one would expect in a subacute phase of trichinosis and would be more readily classified than in any other type of muscular neuritic or joint problem. There is no fever at present and the blood picture is hemoglobin 75 per cent, red blood cells 4,470,000, white blood cells 9,500. The latter show 77 per cent neutrophils and no eosinophils. Do you feel that after this long free interval the present trouble can be attributed to the previous attack of five years ago? Please omit name.

M.D., Illinois

ANSWER—The fleeting pains which the patient has in the extremities at the present time are probably not due to the trichinosis. The parasites soon develop a calcium capsule and from then on (while they remain in the muscle) do not cause any symptoms.

TYPHOID IN BIRDS

To the Editor—I should like to know whether any experiments have been made on the feeding of typhoid to healthy and sick birds and pigeons. If such experiments have been made would the germs after passing through the digestive system be infectious?

PAUL SERRE, Dixmont, Pa.

ANSWER—Few experiments seem to have been done on this subject. The experimental study of chickens as possible typhoid carriers made by Mitchell and Bloomer (*J. M. Research* 31:297, 1914) indicated that these birds could not be infected either by intravenous inoculation or by feeding. The feces of chickens fed with material containing typhoid bacilli over a period of nineteen days were subjected to daily bacteriologic examination but never showed the presence of typhoid bacilli. The apparent destruction of typhoid bacilli in the alimentary tract of chickens is in line with what has been observed when typhoid bacilli have been fed to certain mammals, as calves.

AMITOSIS

To the Editor—What cells in the human body divide only by amitosis? Are there any cells that divide on some occasions by mitosis and at other times by amitosis?

B. L. Knight, M.D., Cedar Rapids, Iowa

ANSWER—All observations on amitosis as a means of growth have been attacked because they are in conflict with the chromosome theory of inheritance. There is no evidence in man for cell growth of this type which meets the criticisms raised. Adequate material is difficult to obtain and many pitfalls await the observer. Amitosis immediately followed by mitosis has been described in rapidly growing tissues of rabbit and pigeon embryo. In various mammals evidences of amitosis have been

found in developing connective tissue, cartilage, bone and muscle. There is no valid reason for doubting similar cellular phenomena in human development. Amitosis as a means of increasing nuclear surface is well established in the fetal syncytium of the human placenta. The binuclear cells in the human liver, in the stomach, in the outer layers of stratified epithelium and in cartilage as well as in some types of multinuclear cells are probably the results of direct nuclear division. In these cases as in the polymorphonuclear leukocytes the object would also seem to be an increase in the reacting surface.

HAWKING

To the Editor—I am in search of a word to convey the action in which subjects suffering with drippings behind the nose get rid of this mucus from within the nose and drippings of the posterior fossae and subsequently expectorate them. The word is to convey that action which draws backward the mucus and the phlegm of the nasal channels and is expectorated.

T. J. DIXITRY, M.D., New Orleans

ANSWER—The term "hawking" is the one most commonly used to describe the action of drawing down from the nasopharynx secretions lodged behind the nose. In some cases the same term is used to designate the act of dislodging mucus resting on or near the vocal cords and then it is usually accompanied by a short cough-like explosive expiration.

USE OF PEPTONE ORALLY

To the Editor—On page 730 of your issue of Aug. 26, 1933, under the title of Angioneurotic Edema you suggest peptone orally as a possible treatment. Would not any protein by mouth provide peptone? The rationale of peptone parenterally is comprehensible to me, but peptone by mouth seems an idle gesture. If I am incorrect will you kindly inform me as to my error?

F. GREGORY CONNELL, M.D., Oshkosh, Wis.

ANSWER—Peptone therapy in allergic conditions has been advocated for many years especially by French and German writers. The references are too numerous to list. In 1916, Pagniez and Vallery-Radot (*Etude physiopathologique et thérapeutique d'un cas d'urticaire géante, anaphylaxie et anti-anaphylaxie alimentaires, Presse med.* 24:529 [Nov. 23] 1916) stated that the feeding of small amounts of the specific foods before the regular meal tended to desensitize the individual temporarily to that food. Even the small amounts of the food however were capable of producing allergic reactions, as noted by Urbach and others. Subsequently many workers such as Urbach, Loeb, Vallery-Radot and Eiselsberg, began to use the specific peptones on the ground that in this way they could obtain temporary desensitization without fear of allergic reactions. Even earlier, nonspecific peptones had been employed orally. In the latter procedure, whenever there was a desirable effect it was presumably due either to the coincidence that the patient was actually sensitive to the protein from which the peptone was prepared or that the peptone represented one of the allergens to which the individual was sensitive and the desensitization to one protected partially against the others.

While the scientific evidence justifies but little confidence in the efficacy of peptone either orally or parenterally, in the discussion of the treatment of angioneurotic edema the use of this substance was suggested only after other more rational methods had been tried.

CABBAGE AND GOITER

To the Editor—Is it positively proved that cabbage in any form is conducive to the formation of goiter? Also is boiled cabbage more likely to do this in case it is true? Again if true is it possible that a goiter already present will be increased by the eating of cabbage occasionally?

M.D., New Jersey

ANSWER—Chesney, Webster and Clawson (*Bull. Johns Hopkins Hosp.* 43:261 [Nov.] 1928) were the first to show that rabbits fed on cabbage as the principal food develop goiter within two or three months and that with continued feeding of cabbage the goiter may grow to large proportions. This work has been confirmed by many workers including Marine and Ivy.

It appears that cabbage grown in certain localities has goitrogenic properties that the goiter is of the simple or endemic type as seen in man and that feeding iodine prevents its development but induces intense intoxication with a high basal metabolic rate and death when administered to such animals after the goiter has appeared. At necropsy the goiter of such animals is of the hyperplastic type. Storing cabbage for thirty minutes increases its goitrogenic properties.

It is believed that cabbage fed as the principal article of diet over long period produces goiter by exhausting the iodine reserve and inducing a severe hyperthyroidism at the thyroid.

It is entirely unlikely that goiter already present in a patient would be influenced materially by the occasional eating of cabbage. In the experimental animal goiter is induced only on a diet, principally cabbage, eaten over a long period. Curiously enough, this type of goiter may also be induced experimentally by other foods than cabbage.

EPINEPHRINE WITH POLLEN ANTIGENS

To the Editor—Will you kindly tell if there is any method of administering hay fever antigen and a dose of epinephrine at the same time? I have a patient who has a relative who says she has had it that way. Please omit name.

M.D. New York

ANSWER—Epinephrine has been added to pollen antigens by many men in recent years and the two have been injected simultaneously. Epinephrine acts by slowing the speed of absorption of the pollen extracts and therefore causes local swelling rather than the uncomfortable and sometimes dangerous general reaction.

This method is, of course, most important in the more sensitive group of patients and it is in this group that the addition of epinephrine is indicated, if it is advisable at all. By this procedure the dosages of pollen extract can usually be safely raised with each injection. However, it is obvious that once started, epinephrine must not be stopped else severe reactions are apt to occur. Duke uses both a tourniquet and epinephrine with his injections so as to lessen still further the chance of a general reaction.

The use of epinephrine in this way has some decided disadvantages. Pain occurs with the injections and is usually marled and nervousness and palpitation are well known results of its use though not so severe when small amounts of epinephrine are used. A great drawback lies in the fact that epinephrine when used over long periods tends to bring about a diminution in its effectiveness. The patient derives less and less advantage from its use. Unfortunately too these individuals are often the ones who develop pollen asthma which may be so severe as to demand the injection of epinephrine. If the patient has already been given this drug over long periods he will probably fail to obtain relief at the time when he most needs it. And lastly it is not known how harmful the continued use of epinephrine is. It is possible that long continued administration of the drug may be more injurious than is now believed.

For these reasons most specialists in this field do not add epinephrine to their injections of pollen extract. Instead they inject slowly and withdraw the needle a little so as to diminish the chance of an intravenous dose. The dosages are increased cautiously and never more than 50 per cent at a time. Local reactions call for repeated injections of the same amount until no soreness results and then amounts are increased slowly. A local reaction is a danger sign—if the next amount is stronger, disaster in the shape of asthma, hay fever or urticaria may ensue. In view of the enormous number of pollen extract injections, the percentage of fatalities is extremely small.

BURNING SENSATION ON PICKLING PEPPERS

To the Editor—For the past several days women have been coming to the emergency hospital complaining of severe burning sensations of their hands following the pickling of red or green peppers. Many of the women state that this is the first time they have experienced this condition although they have been pickling peppers for years. On examination of the hands no definite pathologic picture is presented—there is no redness, swelling or increase in heat—merely the patient's statement of extreme burning. Because of this picture a diagnosis of dermatitis due to pickling peppers has been made instead of dermatitis venenata. I have tried treating these cases with equal parts of glycerin and alcohol similar to treating frost bites. This has proved unsatisfactory, the burning sensation persisting for hours after the application of the solution. Can you please explain the cause, what the proper diagnosis should be and if there is a specific treatment? Is there any literature? Kindly omit name.

M.D. Milwaukee

ANSWER—There has been found in the literature no reference to a burning sensation in pepper picklers. One housewife has, however, reported a temporary dermatitis of hands and face after cutting up fresh sweet peppers and such cases are probably common, though not reported. Sweet peppers are a variety of capsicum, as is red pepper, which was formerly used in medicine as a counterirritant. The fact cited that the picklers have never before experienced this sensation of burning may be explained by assuming a difference in the variety of pepper grown this year or if the same variety was used some difference in the method of cultivation or in the season which has made them more pungent. Or there may be some difference in the other ingredients of the pickle most of which can be

classified as irritants. On the other hand, the picklers may have perspired more freely during the handling of the peppers, thus dissolving more of the irritant and rendering the skin more susceptible.

The particular irritant responsible for the burning sensation might be discovered by making patch tests. A very small cotton pledget soaked in the vinegar used is placed on the skin of one of the susceptible workers covered with a patch of oiled paper, oiled silk, gutta percha or sheet rubber fastened with adhesive, and left in place for a few hours. Small pieces of pepper, the cut surface next to the skin, should be fastened on in the same way, the different tests being placed wide apart so that the burning sensation can be located. The tests should be of short duration, removed as soon as the sensation is distinctly felt. The risk of causing a patch of dermatitis should be taken into consideration.

Thorough washing with hot water and soap as soon as the working hours are over ought to be the best protection against the burning, though enough of the irritant may have been absorbed during the work to cause the sensation after work in spite of thorough removal of the remainder. The use of rubber gloves or of forceps for handling the irritating substance would protect. A lotion composed of 50 per cent or stronger alcohol containing 1 per cent menthol might be helpful in counteracting the burning sensation. An appropriate name for the condition would be pepper picklers' parathesia.

USE OF TRIBROMETHANOL IN PARKINSONIAN SYNDROME

In answer to a query on this subject (THE JOURNAL, September 23, p. 1021) the statement was made that "tribrom ethanol has been employed as a sedative in agitative mental cases in which it has been used in the form of the commercial 25 per cent solution in doses of 0.1 Gm., repeated if necessary two or three times a day."

This statement was in error, since the dosage is always stated as milligrams per kilogram of body weight. One hundred milligrams per kilogram is at or near the upper limit of dosage for basal anesthesia and would provide complete surgical anesthesia in some cases. Such a dosage has been used to control convulsions in tetanus but the recommendation for repetition of this large dose several times a day is hardly warranted without proper qualification. It would usually be quite unnecessary and even dangerous to repeat the full dose. Certainly 100 mg. per kilogram cannot be considered a "sedative" dose for use in Parkinson's syndrome. The solution is given rectally and the 25 per cent dilution is made from the commercial solution which is 100 per cent (weight/volume) in amylene hydrate.

UNILATERAL ATROPHY OF THE BREAST

To the Editor—In THE JOURNAL September 30 page 1098 appeared a query on unilateral atrophy of the breast. A little elucidation may here be advisable. In doing physical examinations of the chest one frequently encounters some of the stigmas of tuberculosis and atrophy of the mammae and of the nipples is often diagnosed as a symptom of tuberculous disease. In the male the nipple is found in the fourth interspace generally, but with contraction of the chest subsequent to pulmonary tuberculous disease the nipple may be greatly displaced. The breast in the female modifies conditions depending on the size and here usually one finds that the breast on the affected side is smaller and less developed than the breast over the still healthy side. Here the nipple itself is smaller and less normally developed and the areola is also smaller and less pigmented over the affected side. In the case quoted of a woman aged 23 after a thorough chest examination a Mantoux test should be given with 1 mg. of old tuberculin. This if positive is followed by a careful examination of the right side of the chest and by a roentgenogram. This will clear up the problem as one of right sided chronic slowly developing pulmonary tuberculosis when pulmonary tuberculosis was never suspected. Many cases of slowly developing latent or hidden pulmonary tuberculosis with good resistance and with little or no fever and no pulse accentuation belong in this category.

JOHN RITTER, M.D. Miami Fla.

HABITUAL ABORTION

To the Editor—In THE JOURNAL October 7 a correspondent requests information as to the cause of habitual abortion. It might be wise to call to his attention that undulant fever is a possible cause. I have one patient who aborted twice in whom I subsequently diagnosed undulant fever by means of the well known agglutination test. In the first instance there was a large area of calcification in the placenta and in the second the placenta was studded with necrotic areas full of decomposed blood clot. In neither instance was the organism *Alcaligenes abortus* isolated from the placenta since the condition was not suspected. However other cases are on record in which the abortion was proved to be due to *Alcaligenes abortus* infection.

HAROLD J. HARRIS, M.D. Westport, N. Y.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY Oral New York Dec 15 16 Sec Dr C Guy Lane 416 Marlboro St Boston
AMERICA: BOARD OF OBSTETRICS AND GYNECOLOGY Written (Group B Candidates) The examinations will be held in various cities of the United States and Canada Dec 9 Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh

AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 Sec Dr William H Wilder 122 S Michigan Blvd Chicago
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KENTUCKY Louisville Dec 57 Sec Dr A T McCormack 532 W Main St Louisville

MARYLAND Regular Baltimore Dec 12 15 Sec Dr Henry M Fitzguth 1211 Cathedral St Baltimore Homeopathic Baltimore Dec 13 14 Sec Dr John A Evans 612 W 40th St Baltimore

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations will be held at centers in the United States where there are five or more candidates Feb 14 16 Ex Sec Mr Everett S Elwood, 225 S 15th St Philadelphia

NEBRASKA Lincoln Nov 22 24 Director Bureau of Examining Boards Mrs Clark Perkins State House Lincoln

NORTH CAROLINA Raleigh Dec 4 Sec Dr B J Lawrence 503 Professional Bldg Raleigh

OHIO Columbus Dec 6 8 Sec Dr H M Platter 21 W Broad St Columbus

PENNSYLVANIA Philadelphia Jan 2 6 Sec Mr W M Denison 400 Education Bldg Harrisburg

TEXAS San Antonio Nov 21 23 Sec Dr T J Crowe 918 19 20 Mercantile Bank Bldg Dallas

WEST VIRGINIA Morgantown Nov 16 18 State Health Commissioner Dr Arthur E McClue Charleston

WISCONSIN Basic Science Milwaukee Dec 16 Sec Prof Robert A Bauer 3414 W Wisconsin Ave Milwaukee

LICENSING OF GRADUATES OF FOREIGN MEDICAL SCHOOLS

In February, 1933 at a meeting of representatives of the Federation of State Medical Boards of the United States, the New York Board of Regents the National Board of Medical Examiners, the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges, a committee was appointed to deal with the problem of graduates of European medical schools who may apply for licensure in the United States. The committee consisted of Dr Harold Rypins, chairman Dr Walter L Biering, Dr William D Cutter Dr Fred C Zapffe and Dr Willard C Rappleye. During the year members of the committee have held conferences with Dr Edouard Rist representing the French government, Dr Georg Kartzke representing the German ministry of education and Dr Robert Alessandri representing Italy. A report of the committee was presented to the Association of American Medical Colleges meeting in Minneapolis, October 31. The committee reports as follows:

1 The number of native-born Europeans applying for admission to the medical licensing examinations in the United States is annually diminishing and the examinations appear to be serving as a barrier against the licensure of the incompetent.

2 At the present time the only European countries in which American medical students matriculating after March 1 1933 will on the completion of their studies be eligible for admission to American medical licensing examinations are Italy and the British Isles.

3 There has been established a voluntary method for selecting and restricting American students for admission to the study of medicine in Italy, which is eminently satisfactory and should serve as a model for agreements with other European countries.

4 The joint action of the Federation of State Medical Boards of the United States the Council on Medical Education and Hospitals of the American Medical Association the Association of American Medical Colleges and the National Board of Medical Examiners has definitely decreased the number and improved the quality of American students studying medicine in Europe. It has undoubtedly raised the prestige of American

medicine in Europe and will raise the reputation of European medical faculties throughout the United States and result in a mutual understanding between the medical profession in this country and in Europe.

The committee further recommends

1 That no action be taken in reference to the admission of native-born Europeans for admission to American medical licensing examinations and that, so far as is consistent with the maintenance of high educational and professional standards, physicians who are victims of racial and religious persecution in Germany be permitted the privilege of practicing medicine in the United States.

2 That the voluntary method of selecting in this country students for admission to Italian medical schools serve as a model for similar agreements with other European countries and that a committee be appointed to advise and assist European authorities in reference to the selection of American students.

3 That the committee be continued with authority to carry on further negotiations with the various European authorities looking toward a proper selection and restriction of American students in Europe.

The committee also expressed its appreciation of the valuable cooperation of Prof William C MacTavish of New York University and of the sympathetic understanding of this problem by the representatives of the various European countries.

Georgia June Report

Mr R C Coleman, joint-secretary, State Examining Boards, reports the written examination held by the Georgia State Board of Medical Examiners at Atlanta, June 14-15, 1933. The examination covered 10 subjects and included 100 questions. An average of 80 per cent was required to pass. Eighty-five candidates were examined, all of whom passed. Five physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1932)	92 6	
Howard University College of Medicine	(1932)	86 3	88 9
Emory University School of Medicine	(1932)		89 7
(1933)	88 4 88 7 88 8 88 8 89 2 89 4 89 5 89 5		
	89 6 89 6 89 8 90 0 90 2 90 5 90 5 90 5 90 6 90 6		
	90 6 90 7 90 7 90 7 90 8 90 8 90 9 90 9 91 91		
	91 3 91 3 91 3 91 8 91 8 92 2 92 9 93 5 93 8 94 1		
	94 6		
University of Georgia School of Medicine	(1932)	91 2	
(1933)	86 2 87 6 88 4 88 6 88 6 88 6 88 8 89 8 89 4		
	89 4 89 7 90 0 90 1 90 1 90 2 90 4 90 5 90 6 90 6		
	90 6 90 8 91 1 91 2 91 5 91 5 91 6 91 8 91 9 92		
	92 9 92 9 92 9 93 93 6 94 1 95		
University of Louisville School of Medicine	(1932)	92 4	
Columbia Univ College of Physicians and Surgeons	(1932)	90 9	
New York University University and Bellevue Hospital Medical College	(1896)	82 9	
Meharry Medical College	(1932)	84 1	

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity With
Howard University College of Medicine	(1931)		Missouri
Tulane University of Louisiana School of Medicine	(1923)		Louisiana
College of Physicians and Surgeons of Baltimore	(1914)		Maryland
Detroit College of Medicine and Surgery	(1932)		Michigan
Medical College of the State of South Carolina	(1923)		S Carolina

Oklahoma September Report

Dr J M Byrum, secretary, Oklahoma State Board of Medical Examiners reports the written examination held in Oklahoma City Sept 12-13 1933. Seven candidates were examined all of whom passed. Eight physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Number Passed
School of Medicine of the Division of the Biological Sciences University of Chicago	(1933)		1
St Louis University School of Medicine	(1932)		1
University of Oklahoma School of Medicine	(1932)		2
University of Tennessee School of Medicine	(1931)		1
University of Tennessee College of Medicine	(1932)		1
University of Wisconsin Medical School	(1930)		1

College	LICENSED BY RECIPROCITY	Year Grad	Per Cent
University of Arkansas School of Medicine	(1930)	(1931)	Arkansas
University of Maryland School of Medicine	(1913)		Maryland
University of Minnesota Medical School	(1921)		Minnesota
University of Buffalo School of Medicine	(1921)		Buffalo
University of Tennessee College of Medicine	(1931)		Tennessee
Baylor University College of Medicine	(1931)		Texas
University of Texas School of Medicine	(1932)		Texas

Book Notices

Tuberculous Bacillæmia By C. S. Wilson. With appendices and notes by Herta Schwabacher, C. C. Okell and F. A. Wood. Medical Research Council Special Report Series No. 182. Paper. Price 2s. 6d. Pp. 116 with illustrations. London: His Majesty's Stationery Office, 1933.

Within the last few years numerous excellent critical reviews accompanied by sound experimental investigation of the problem concerned have appeared under the auspices of the Tuberculosis Committee of the Medical Research Council in Great Britain. Dr. Wilson's monograph conforms to the high standard set by previous publications. The numerous reports of tuberculous bacillæmia emanating from central Europe at the present time based on the views and technique of Lowenstein have formed a highly puzzling chapter in tuberculosis investigation. Tuberculous bacillæmia has been reported as extremely frequent in all forms of tuberculosis, but in addition its existence has been recorded by Lowenstein and others as common in rheumatism, arthritis, chorea and a variety of diseases of the nervous system which have accordingly been considered by these investigators as hitherto unsuspected forms of tubercle bacillus disease. During the last few years much opposed evidence has also accumulated. Wilson has summarized the evidence for both sides and evaluated it in a thoroughly sane way. His criticism casts grave doubt on the reliability of much of the evidence recorded for bacillæmia in the diseases named. In the monograph a large number of sources of error are pointed out to which it is clear that many of those reporting positive results have not paid sufficient attention. Readers cannot fail to be impressed by the soundness of his presentation. As appendices to the monograph Drs. Schwabacher, Okell and Wood have reported carefully controlled experimental investigations of their own on the subject which completely fail to bear out the contention of frequent tuberculous bacillæmia in visceral tuberculosis and the other diseases named. On the other hand, Dr. Schwabacher's results indicate that only by rigid technique can certain sources of error leading to false positive results be excluded. The general conclusion of the authors is that technical errors are responsible for a high percentage of the cases of bacillæmia reported.

The Essential Psychoses and Their Fundamental Syndromes By Dom Thomas Verner Moore, Ph.D., M.D. Volume III, Number 3, Studies in Psychology and Psychiatry from the Catholic University of America. Edited by Edward A. Pace, Professor of Philosophy. Paper. Pp. 128. Baltimore: The Williams & Wilkins Company, 1933.

This is an ingenious attempt at assembling the symptoms of psychoses into fundamental syndromes through the application of a mathematical method of association or correlation. After selection and definition of the separate symptoms observed in the essential psychoses (dementia præcox and manic-depressive conditions) a tetrachoric method of intercorrelating symptoms was adopted instead of the purely empirical grouping of these symptoms into syndromes, and the syndromes were determined by mathematical incidence of the symptoms. Those interested in the details of applying Spearman's tetrad function to determine the underlying common factors in a table of variables can find a description of the method in the reference given in the footnotes in Dr. Moore's book. Twenty-six of the symptoms noted in a group of 402 psychotic patients have been defined and grouped under the four headings of general cognitive, emotional and volitional. In the final study, cases of only 367 of the patients were used in obtaining the intercorrelations of the symptoms. Naturally, a work attempting an approach of this sort will not prove easy reading. Some knowledge of mathematical functions and methods is essential, and the reader must be grounded in clinical psychiatry. As has been stated, the symptoms of the psychoses have been chosen from the dementia præcox and manic-depressive groups. After the application of Dr. Moore's method five syndromes are erected out of the twenty-six basic symptoms displayed by the patients studied. Four of the syndromes which are termed the catatonic syndrome, the deluded and hallucinated syndrome, the constitutional hereditary depression syndrome and the retarded depression syndrome are more or less familiar as clinical entities under somewhat different terminology. The

fifth syndrome is termed by Dr. Moore paranoia irritabilis. He states that the cardinal syndrome underlying this condition is that of paranoid irritability and that it consists of four specific symptoms—irritability, tendency to tantrums, destructiveness, and euphoria. There is a tendency of paranoia irritabilis to combine with other symptoms of psychosis. This book will hardly be used by the medical student or by the general practitioner. To the psychiatrist it presents a departure from the usual method of classifying symptoms. The symptoms selected as a basis for this study are well defined in the text.

Les réveils de la tuberculose pulmonaire chez l'adulte. Conditions de leur polymorphisme anatomo-clinique. Par le professeur Emile Sergent. Paper. Price 4 francs. Pp. 226 with 38 illustrations. Paris: Masson & Co., 1933.

In this work the author has given a brilliant clinical interpretation of the reactivation of tuberculosis in the adult. In places it is highly speculative. Nevertheless it is a fascinating work and convincing even where the issues may be bridged with scant evidence. It consists of a collection of lectures fitted together and given a general title. It contains the author's theories representing well the French school, supplemented by serial roentgenograms. One cannot read this book without obtaining clearer views on the complex subject of reactivation.

The first chapter is a lecture devoted to the clinical evolution of the disease and the second to the problem of reactivation. Each serves as an outline for the last three chapters which elaborate interestingly on three phases of reactivation: the soil, the seed and the routes of reactivation.

Perhaps the greatest worth of the volume is in reemphasizing the role of the host in the disease. The author considers the soil of tuberculosis little different from the soil for wheat farming or for the oaks in Fontainebleau where many acorns fall but few produce oak trees.

First, the host is divided into two great divisions of virgin soil and tuberculized soil. Only the tuberculized soil is concerned in the subject under discussion. The difference of the two is explained by the classic Koch phenomenon' (supplemented by the work of Roemer and Debre) wherein the host undergoes a change of reactivity as a result of and during a tuberculous infection. This 'allergy' or lack of it is the fundamental difference. Then the author brings in almost an innumerable set of minor factors that bear on the infection and its course: age, race, sex, puberty, pregnancy, other diseases, accidents, trauma and many other conditions that change the soil from a resistant one to a good culture medium. Slight temporary chemical changes may permit the growth of a tubercle bacillus that would otherwise be eliminated or die out. Certain tissues, for example, will rarely ever permit tubercle bacilli to grow (muscle, pancreas), others rarely, while others are good soil. Now these tissues are not only modified by allergy but all the vicissitudes of the human body during life also enhance or depress the growth of the parasites that chance to localize in them. The symptomless lesion that contains living bacilli 'buried alive' he considers active but the lesion in exacerbation he calls an "active evolution" beginning with active clinical disease. From this, according to Sergent, it can be assumed that there would be three types of lesion: cured, active and active evolutive. The active lesion, he thinks, elaborates a filtrable virus through the capsule that may ultimately cause a spread of the disease. There are, perhaps, some workers who would take exception to the liberal use of activity. Large numbers of primary tubercles bury the bacilli alive and they stay buried until they die out without producing disease at all. These could properly be called encapsulated and healing rather than active.

In the second section the author considers the parasite. Tubercle bacilli like all living beings have peculiar and variable affinities that govern largely its localizations and resulting infections. Some bacilli, he thinks, are inert and are thrown out without any effect on the host; others are active and may localize if the opportunity presents itself. The extensive polymorphism of clinical tuberculosis, however, is explained largely on the basis of a variable parasite. Not only does the parasite vary from strain to strain but each bacillus varies in its growth and action. Particularly does he stress the effect of the filtra-

ble phase of the tubercle bacillus when the effect on the host is atypical. He is not as extreme as Calmette in setting apart a separate "ultravirus disease," but he does believe in an overlapping of virus and bacillus, producing a heterogeneous type of parasite that causes much of the variability in clinical manifestations.

He explains many obscure clinical phenomena as a result of the filtrable phase. The condition in one patient simulated asthma but ultimately was found to be tuberculosis. The early obscurity he thought was due to filtrable forms, because by filtering the sputum they obtained an atypical tuberculosis in animals whereas there were no bacilli found in the sputum until long afterward, when an "evolutionary attack" appeared that was typically tuberculous. The lesion of the virus, he states, is not caseous and there is no primary focus ever produced. Cessation comes only with the bacilli. Many other conditions are reported to be due to the virus, such as rheumatoid arthritis, erythema nodosum and certain types of tuberculous pneumonia. The results, however, are not constant, because when the virus comes back to the bacillary phase many new strains of bacilli are created that vary from one to another.

There is no denying now that filtrable forms of tubercle bacilli exist, that they are infectious and that they are a factor in the disease, but the author's free interpretation of atypical clinical signs in terms of the yet rather meager evidence of filtrable forms in such cases must be considered for the present only theory. For example, free microscopically visible granules may account for all the phenomena without invoking the ultra-microscopic forms at all, non-acid fast forms may also escape detection and play a part instead of the virus. The extent of the role of the pleomorphic forms of tubercle bacilli is yet undetermined and can be made out only by long and careful bacteriologic study.

The routes of reactivation are given with an excusable bias in favor of the author's theories of lymphatic spread. As interesting as his ideas are relative to the reactivation of old foci in the parenchyma and the hilar lymph nodes by lymphatic spread, both with and against the normal current, the extent of each mode of spread is still undetermined. Little stress is placed on the direct rupture of old foci into the bronchi or endobronchial spread by a penetration into the bronchi or by hematogenous spread, well represented by the recent German school of teaching. It is true perhaps that some must start in the periferical lymphatics, but they are not necessarily confined there long. Both the blood and the bronchial channels may be penetrated easily and early and cannot well be left out of such a work. The rather direct route from the cervical lymphatics to the lungs needs further confirmation, and the diagnosis of 'peribronchitis' by the x-rays alone would be difficult. Those who follow the evolution of tuberculous lesions to the necropsy room find that many shadows are overlooked on antemortem roentgenograms and that many shadows which are present are of little or no significance. Much remains to be done in the pathologic interpretation of roentgenograms.

In spite of or, in fact on account of much controversial matter, the book is highly recommended to everybody engaged in tuberculosis work, especially those interested in the subject from an epidemiologic and clinical standpoint. It may be justly represented as a potent stimulant to creative thinking in tuberculosis as well as a work that is composed principally of good teaching that will endure.

Teaching Methods in Medicine. The Application of the Philosophy of Contemporary Education to Medical Schools. By William Duncan Reid. A.B. M.D. F.A.C.P. Assistant Professor of Cardiology, Boston University School of Medicine. Cloth. Price \$1. Pp. 111. Boston. The Author. 1933.

Many clinical teachers of medicine admittedly understand but little of pedagogy. This small volume attempts to describe as simply as possible certain fundamental pedagogic methods now used by modern teachers in other fields of instruction and to arouse the interest of clinical teachers in the broad problems of education. The author begins with the argument that at present no formal teacher training is necessary for teachers of medicine and therefore that their teaching is apt to be conducted in more or less haphazard fashion and in a manner not strikingly successful. He describes briefly various teaching methods employed in progressive schools and colleges and

attempts to show how these methods might be utilized or modified to improve medical teaching. He gives a number of good references to the current literature on education, urges doctors who are instructing medical students to study seriously how to teach and suggests, finally, that a useful development in the scheme of medical education well might be to bring it into line with the philosophy of education now existing in the public schools. On the whole, this book makes a gallant effort to be stimulating and of practical interest to teachers of medicine. As a pioneer effort, it deserves sympathetic commendation.

The Anatomy of the Human Skeleton. By J. Ernest Frazer. D.Sc. F.R.C.S. Professor of Anatomy in the University of London. Third edition. Cloth. Price 28s. Pp. 292 with 219 illustrations. London. J. & A. Churchill. 1933.

The most important addition to Frazer's fine contribution to the subject of anatomy of the human bones and joints and their muscles is a description of ossification in individual bones. He advises those who wish to study the skeleton not to confine their attention to the bones but to consider also the cartilage, ligaments and joints that are concerned in maintaining the form of the body and in enabling it to move about. He divides the skeleton into the appendicular skeleton of the limbs, the axial skeleton of the trunk and the skull. Bones do not take shape as such *ab initio* but are preformed in the embryo as condensations of mesenchyme, which in most cases become cartilaginous before ossification commences in them but in some remain unchondrified. In the former case the bones are formed in cartilages, and in the latter they are formed in membrane. These terms mean that the bones have replaced cartilage or noncartilaginous membrane, as the case may be. The process of ossification is essentially similar in the two varieties of formation except that in chondral ossification the cartilage is calcified first and then absorbed and replaced by the true bony formation. Certain large cells called osteoblasts have the power of depositing or forming bone around themselves, they exist in the covering tissues of the developing bone (periosteum or perichondrium) and, in the case of chondral ossification, grow into the cartilage and occupy the spaces made by the confluence of the cell spaces that goes with calcification. The early bone thus formed is removed by the action of other cells known as osteoclasts, and in this way a medullary cavity is provided in long bones while additional bone is being laid down on the surface under the periosteum, so that the bone increases in thickness. Thus there is no direct ossification of cartilage but a replacement of it by bone that is made in the same way as in membrane bones. This book is a virtual encyclopedia of the subject considered, and students should so regard it. It is not elementary or written for those who try to grasp the subject in a hurry. The illustrations, which are chiefly diagrammatic, are excellent. Many are in color. In reading this book the greatest benefit can be derived if the student has dried specimens of bones before him and refers to them continually.

Dietetics for the Clinician. By Milton Arlenden Bridges. B.S. M.D. F.A.C.P. Associate in Medicine at the New York Post Graduate Medical School, Columbia University. In collaboration with Ruth Lathrop Gallup Dietitian. Foreword by Herman O. Mosenthal. A.B. M.D. Director of Medicine at the New York Post Graduate Medical School, Columbia University. Cloth. Price \$6.50. Pp. 666. Philadelphia. Lea & Febiger. 1933.

This volume follows the usual routine of dietetic textbooks, proceeding from a review of normal digestion food requirements and food classifications through the dietetic therapy of disease, infant feeding and diseases of childhood to a comprehensive appendix of recipes and statistical tables. The majority of the chapters have been compiled by the author others having been left in the hands of his colleagues who are specialists in various fields. While the pathologic and dietetic aspects of the subjects are well handled the book excels in its purpose as a thorough reference work. It is liberally filled with practical diet outlines food tables and recipes particularly helpful to the practitioner who unfortunately is frequently expected to be both menu designer and ready reference cookbook for his patients. In fact one does not encounter in one volume as complete a list of food tables as is found here. Attention may be called to the thoroughness of the less usual tables such as those covering foods highest in oxalic acid foods capable of increasing uric acid and purine free foods.

Medicolegal

Insurance Loss of Use of Arm by Surgeon—The defendant insurance company insured the plaintiff, a physician and surgeon, against "dismemberment or complete and permanent loss of use of limb." By reason of paralysis agitans, affecting his right arm, the plaintiff became unable to operate with a knife. He sued on the policy, and when the trial court directed a verdict for the insurance company he appealed to the United States circuit court of appeals, seventh circuit. The question on appeal was whether, within the meaning of the policy, the insured physician had completely and permanently lost the use of his right hand or arm as the result of disease, with reference to the occupation in which he was engaged when he was insured. The plaintiff physician contended that the policy insured him as an operative surgeon, that he was a practitioner of medicine only as an incident to his operative surgery, and that his right to insurance benefits as an operative surgeon, because of the loss of the use of his right hand and arm, was not defeated by the fact that he could still use them in the practice of medicine. The use of the arm and hand, he contended, was completely and permanently lost for all practical purposes in the occupation with reference to which he was insured.

The policy, said the circuit court of appeals, insured the plaintiff as a physician and surgeon. Ninety-five per cent of his work may have been surgery when the policy was issued, but if so, that fact formed no part of the contract and there was no evidence that the insurance company knew it when the contract was made. The evidence showed that since the plaintiff's illness occurred he did everything in the practice of his profession that he did before, with the exception of using the knife in operations. In doing those things he used his right hand and arm, not perhaps as well or with as much ease as he formerly did, but certainly in such manner and extent as to constitute some actual practical use of his right arm and hand in the pursuit of his profession. The fact that the plaintiff has sustained a very great and serious loss in the use of his right arm and hand and that that loss is permanent is not determinative however of his right to recover in this action. The burden of proof was on him to show that no actual practical use of his hand and arm as a physician and surgeon remained, and in that proof he failed. The evidence was not conflicting, said the court, and if the case had been submitted to a jury and the jury had returned a verdict for the physician, there would have been no evidence in the record to support the verdict. There was no error committed, therefore, when the trial court directed a verdict for the insurance company. The judgment of the trial court was affirmed.—*Beck v Zurich General Accident & Liability Ins Co* 62 Fed (2d) 965

Eugenic Sterilization Statute Constitutional—The sexual sterilization of inmates of state institutions for the insane who are afflicted with hereditary, recurrent forms of insanity, idiocy, imbecility, feeble-mindedness or epilepsy is authorized by article 3 chapter 26, Session Laws, Oklahoma, 1931. Main, an inmate of the Central Oklahoma State Hospital for the Insane, came within this class. The State Board of Public Affairs, complying scrupulously with the provisions of the statute, ordered him sterilized. Its order was affirmed by the district court, Oklahoma county. Main by his guardian, appealed to the Supreme Court of Oklahoma.

On Main's behalf it was contended that the district court erred in finding that the proposed vasectomy would be without detriment to Main's general health. The physicians who testified that such an operation would be beneficial, rather than detrimental, it was argued, had never performed such an operation. But, said the Supreme Court, learned and scientific men can virtually know things without having experienced them, and the opinion of these physicians is confirmed by *Buck v Bell* 143 Va 310 130 S E 516 where it was said:

"These operations do not impair the general health or affect the mental or moral status of the patient or interfere with his or her sexual desires or enjoyment. They simply prevent reproduction. In the hands of a skilled surgeon they are 100 per cent successful in results."

So too in *Smith v Command Wayne Probate Judge*, 231 Mich. 409, 204 N W 140, it was said: "These operations are the least radical known to medical science." The record amply sustained the finding made both by the board and by the district court, that vasectomy would not injure Main's general health.

It was next contended that the power conferred by the statute on the State Board of Public Affairs, an administrative body, is judicial in character and therefore under the state constitution could not be lawfully so conferred. The power so conferred, said the court, requires the administrative board to ascertain facts and to make a proper order on the basis of the facts so found. While the board's duties are to some extent judicial or quasi-judicial, yet a review and trial de novo before a judicial tribunal are authorized. Because of the review authorized, the trial de novo and the stay pending such review and trial, Main was not injuriously affected by the grant of quasi-judicial powers on an administrative board. He has no concern therefore, with the grant of power to the board.

Main's guardian next contended that the sterilization statute was contrary to the provision of the Oklahoma constitution, which prohibits the infliction of cruel or unusual punishments. The Supreme Court found however that there is no element of punishment involved in the sterilization of feeble-minded persons. In this respect sterilization is analogous to compulsory vaccination, both are nonpunitive. The constitutional prohibition of cruel or unusual punishment has no application to the surgical treatment of feeble-minded persons, for the constitutional prohibition has reference to punishment after conviction of crime. The record said the supreme court, affords uncontradicted evidence to support the view of the trial court that vasectomy is not cruel, inhuman, unreasonable or oppressive.

On behalf of Main it was next contended that the act violates section 7, article 2 of the state constitution, which provides that no person shall be deprived of life, liberty, or property, without due process of law, "because 'it deprives a man of a part of his life, to wit the ability to produce life' or procreate. Assuming, said the Supreme Court, that the right to beget children is a natural and constitutional right yet this right cannot be extended beyond the common welfare. Under the police power, the state may impose reasonable restrictions on the natural and constitutional rights of its citizens. This statutory provision for sterilization of feeble-minded inmates of public institutions the court held, constitutes a reasonable restriction on such natural and constitutional rights.

A further objection urged against the act was that it violated section 2, article 2, of the state constitution, which provides that:

All persons have the inherent right to life, liberty, the pursuit of happiness and the enjoyment of the gains of their own industry.

This contention, continued the court, is without merit. As was said in *Buck v Bell* supra:

The public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the state for these lesser sacrifices often not felt to be such by those concerned in order to prevent our being swamped with incompetence. It is better for all the world if instead of waiting to execute degenerate offspring for crime or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the fallopian tubes.

The order of the State Board of Public Affairs that Main be sterilized was accordingly affirmed.—*In re Main (Okla)*, 19 P (2d) 153

Society Proceedings

COMING MEETINGS

- American Society of Tropical Medicine Richmond Va Nov 15 17
- Dr Henry E Meleney Vanderbilt University School of Medicine
- Nashville Tenn Secretary
- Medical and Surgical Association of the Southwest El Paso Texas
- Dec 7 9 Dr W Warner Watkins Box 1587 Phoenix Ariz
- Secretary
- Society for the Study of Asthma and Allied Conditions New York
- Dec 9 Dr W C Spain 116 East 53d Street New York Secretary
- Southern Medical Association Richmond Va November 14 17 Mr
- C P Loran Empire Building Birmingham Ala Secretary
- Southern Surgical Association Hot Springs Va Dec 12 14 Dr
- Robert L Payne 142 York Street Norfolk Va
- Western Surgical Association Cincinnati Dec 8 9 Dr Frank R
- Teachnor 306 East 12th Street Kansas City Mo Secretary

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

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Carcinoma of Cervix in a Girl of Sixteen M Glass Brooklyn —p 104
Tubal Twins Case W A Jewett Brooklyn —p 108
Kraurosis Vulvae G Johnson Wilmington N C —p 110
Combined Pregnancy H D Lafferty Philadelphia —p 112
Traumatic Rupture of Liver and Kidney with Exsiccation Complicating Pregnancy W F Cemmil and T A Martin York Pa —p 113
Inexpensive Light for Delivery or Operating Rooms W C Danforth Evanston Ill —p 114
Epilepsy Associated with Ovarian Dysfunction Treated by Irradiation I I Kaplan New York —p 116
Ophthalmus of the New Born C C Weitzman Brooklyn —p 117
Device for the Correction of Postpartum Uterine Atony E L Stone New Haven Conn —p 118
Acute Fibroid Degeneration with Complete Torion of the Uterus Case A J Fleischer and J I Kushner New York —p 120

Trichomonas Vaginalis Vaginitis—Hesselstine presents a preliminary report of experimentation with the vaginal flagellate which indicates that the vaginal trichomonad live on bacteria and are possibly nonpathogenic. He describes the technique for the separation of the flagellates and bacteria by the washing and the micromanipulation methods. He draws the following conclusions from this study: 1 The pathogenicity of *Trichomonas vaginalis* Donne is still unproved. 2 Some of the fallacies of the arguments favoring pathogenicity of this protozoon have been mentioned. 3 Experimental observations

indicate that *T vaginalis* Donne is a scavenger and feeds on bacteria. 4 *T vaginalis* Donne fails to grow in the medium used in the absence of bacteria. 5 Presumably, an abnormal vaginal flora, or the condition producing it, is a prerequisite for the invasion of the trichomonads. 6 A nonhemolytic streptococcus is capable of producing a "trichomonas vaginitis" in the absence of trichomonads.

American Journal of Syphilis, St Louis

17 305 448 (July) 1933

- Syphilitic Peripheral Vascular Diseases Treatment by Means of an Intermittent Negative Pressure Environment L G Herrmann, Cincinnati —p 305
Sudden Right Hemiplegia and Dysarthria Occurring in a Young Male Negro Some Five Weeks After Cessation of Brief Arsenical Therapy. Evidences of Syphilitic Meningitis and Arterial Occlusion But Not of Neuroradiculitis. Discussion of Diagnosis and Therapy L F Barker, Baltimore —p 321
*Syphilis of Cerebellopontile Angle E D Friedman S Brock and P G Denker New York —p 330
*Method to Introduce Larger Amounts of Arsphenamines into Central Nervous System Preliminary Report J Wittenberg Brooklyn —p 339
Studies of Reaction of *Spirochaeta Pallida* Recurrentis and *Trypanosoma Equiperdum* to Arsenobenzol Preparations F Foldvari, Budapest Hungary —p 346
*Takata Serum Reaction as Diagnostic and Prognostic Aid in Syphilology and Dermatology H Tannenholz Detroit —p 352
Observations on Spinal Fluid Sugar and Chlorides in Neurosyphilis G Brewer Washington D C —p 382
Iron Reaction in Parotic Neurosyphilis H H Merritt, M Moore and H C Solomon Boston —p 387
Reversal of Blood Wassermann Reaction in Untreated Syphilis E T Hoverson G W Morrow and R O Hawthorne Kankakee, Ill —p 392

Syphilis of Cerebellopontile Angle—Friedman and his associates present five cases in which there were phenomena referable to the seventh and eighth nerves together with homolateral cerebellar signs. There were definite signs of involvement of the fifth nerve in four. There were general cerebral symptoms such as headache, dizziness and vomiting. In four, the disks were normal, in one, the fundi showed papilledema and hemorrhages. In spite of clinical improvement, the damage to the eighth nerve persisted in all the patients. There was marked facial weakness of the peripheral type. Such definite facial weakness is an unusual observation in early cases of angle tumor. Moreover, the signs of involvement of the fifth nerve were much more conspicuous than those observed in cases of angle tumor in the early stage in which, as a rule, only anesthesia of the cornea on the ipsilateral side can be demonstrated. The authors emphasize the fact that the coarse vestibulocerebellar type of nystagmus was not observed in their patients. It has been ascribed by Marburg and others to pressure on the brain stem and is encountered in most angle tumors. In the differential diagnosis between this lesion and neoplasm of the cerebellopontile angle it would seem that the disappearance, under early and persistent antisyphilitic therapy, of the general and some of the local angle signs and symptoms is in favor of a syphilitic process. The positive serologic observations are of the greatest importance. The Wassermann reaction was positive in the blood in all patients. In four of them, serologic evidence of syphilis was present in the cerebrospinal fluid. This syndrome must not be confused with simple syphilis of the eighth nerve or the neural recurrences that come on as a result of inadequate treatment. In these conditions the lesion is usually limited to the eighth nerve especially the cochlear division and phenomena attributable to pathologic changes in the angle are absent. Active and persistent antisyphilitic treatment led to considerable improvement in three patients. The early recognition of this clinical entity is of practical importance because the prompt institution of antisyphilitic therapy yields good results.

Introduction of Arsphenamines into the Central Nervous System—Since the drugs of the epinephrine group are powerful though ephemeral dilators of the cerebral vessels in man and since the bulk of arsphenamine injected intravenously is deposited into the tissues in a few minutes Wittenberg thought that by using bath properly timed an increased amount of the arsphenamine could be introduced into the central nervous system. One should expect to find more arsenic in the cerebrospinal fluid after such treatment than in that of patients treated by the ordinary method provided of course, the meninges

ges of the patients are permeable to arsenic viz that the central nervous system is involved. The safety of this treatment was tested in properly chosen patients. The authors report on the small number of patients treated shows that the treatment is safe in properly selected cases and that a larger amount of arsenic is found in the cerebrospinal fluid following this modified form of treatment.

Takata Serum Reaction—Tannenholz states that the Takata serum reaction is almost always positive in cases of advanced, definite parenchymatous liver damage e. g., cirrhosis of the liver. It is more frequently positive in cases of syphilis (15 per cent) than in other cases (3.5 per cent) (genito-urinary, dermatologic and medical cases) when a question of liver damage does not present itself. When the Takata test is positive in cases of syphilis, in association with liver damage is suggested. It is more frequently positive in cases of secondary syphilis (34 per cent) and seropositive latent syphilis (37 per cent) than in primary (14 per cent) and tertiary (14 per cent) syphilis. The author suggests that arsenical exanthem is more common in cases of syphilis with a positive Takata reaction than in syphilitic patients with a negative Takata reaction. The outcome of the Takata reaction bears no relation to the Wassermann or Memmick reactions. The Takata test is not infrequently positive in nonsyphilitic cases when other signs of liver damage or probable changes in the albumin-globulin ratio are present (arthrosis, nephrosis, pernicious anemia). The Takata serum reaction may be of diagnostic and prognostic aid in syphilitic, dermatologic and medical cases.

Archives of Pathology, Chicago

16 177-314 (Aug.) 1933

- Appendical Oxyuriasis and Appendicitis. Based on a Study of Twenty Six Thousand and Fifty One Appendices. H. Gordon. Ann Arbor Mich.—p. 177.
Spondylitis of Swine Associated with Bacteria of Brucella Group. W. H. Feldman and C. Olson Jr. Rochester Minn.—p. 195.
Influence of Intake of Calcium on Thyroid Gland of Albino Rat. Juanita Thompson. Toronto Canada.—p. 211.
Experimental Pathology of Liver. VII. Effects of Feeding Desiccated Thyroid Gland on Restoration of Liver. G. M. Higgins. Rochester Minn.—p. 226.

California and Western Medicine, San Francisco

39 172 (July) 1933

- Alameda County Plan. Plan for the Care of Indigent and Part Pay Patients and for a Mutual Nonprofit Hospital Service. G. G. Reinle. Oakland.—p. 1.
Central Clinic Service—San Diego County Plan. Plan for Reduced Fee Medical Care and Hospitalization. H. G. Holder. San Diego.—p. 6.
Living Grafts of Endocrine Glands. H. B. Stone, J. C. Owings and G. O. Gey. Baltimore.—p. 10.
Prostatic Obstruction. Development of Its Surgical Treatment. H. C. Bumpus Jr. Rochester Minn.—p. 13.
Cardiovascular Disease in Diabetes Mellitus. Analysis of Four Hundred and Twenty Five Cases. J. W. Sherrill. La Jolla.—p. 17.
The Physician's Interest in the Making of a Will. H. F. Peart. San Francisco.—p. 20.
Muscle Training in Industrial Injuries. T. E. P. Gocher. San Francisco.—p. 21.
Refraction. Is It a Medical or a Nonmedical Problem? T. W. Kelsey. Sacramento.—p. 25.
Calcium Therapy in Urology. H. A. R. Kreutzmann. San Francisco.—p. 29.
Chronic Purulent Otitis Media. Its Treatment with Iodine Powder (Sulzberger). R. Fletcher. San Francisco.—p. 32.
Adenomatous Gout. Clinical Study. W. P. Kroger. Los Angeles.—p. 35.
*Sterility. Report of Seven Hundred Consecutive Cases. F. M. Loomis. Oakland.—p. 38.
Toxemias of Pregnancy. L. I. Breitstein and A. Bernstein. San Francisco.—p. 42.

Sterility—Loomis presents an analysis of the histories of 732 sterile women, of whom 473 were treated. Of these, 208 or 44 per cent became pregnant. The Rubin test was normal in 53 per cent and 13 per cent were dismissed because repeated efforts showed total closure of tubes. Repeated efforts produced partial or complete opening in 34 per cent of these women whose first examinations were unsatisfactory, and nearly 20 per cent of these women became pregnant. Normal spermatozoa were present in 53 per cent after coitus, 37 per cent were only fair, and 10 per cent showed complete aspermia.

giving a high proportion of responsibility in sterility to the male or relative infertility. Cervical stenosis and erosion were found in 42 per cent and 38 per cent, respectively. Both are amenable to office treatment. Endocrine dysfunction was present in 67 per cent, most of whom were treated with thyroid or preparations of the female sex hormone. Basal metabolism is not relied on alone in judging hypothyroidism. Of these patients, 35 per cent became pregnant. The incidence of toxemia is not higher than normal, but involuntary abortions occurred in 17 per cent.

Colorado Medicine, Denver

70 243-276 (July) 1933

- Complications in Treatment of Congenital Dislocation of Hip. R. G. Packard and H. I. Barnard. Denver.—p. 248.
Corrective Treatment of Compression Fractures of the Spine. Atha Thomas and C. F. Sevier. Denver.—p. 252.
General Principles of Radiation Therapy of Tumors. W. W. Wason. Denver.—p. 257.
The Physician Looks at Himself. L. W. Frank. Denver.—p. 267.

Radiation Therapy of Tumors—Wason presents the following points concerning radiation therapy of tumors: 1. There should be a careful examination of the patient with an analytic evaluation of the symptoms present. 2. There should be a judicious and never a contemplated removal of a section of the tumor for the microscopic diagnosis between inflammatory benign and malignant neoplasm. 3. In the preliminary examination, the amount and extent of metastases should be determined. It is nearly always the metastases that are fatal to the patient. 4. The degree of the malignant condition is of great importance in selecting the method of treatment—surgical or radiation therapy. It even governs the manipulation of the tumor during the preliminary examination. 5. In advanced cases of malignant disorders if any treatment at all is justifiable radiation therapy is nearly always the method of choice. The economic problem must be given special consideration in these cases. 6. If radiation therapy is selected as the method of choice, it should be applied by one especially qualified for the task. 7. The general management of the case should be under the direction of a radiologist, a surgeon and the attending physician. 8. Every radiologist should keep an active follow up list of his cases in which radiation therapy has been employed. 9. Pain following surgical or radiation treatment is usually the first warning signal of a return of the condition in either the primary tumor or its metastases.

Illinois Medical Journal, Chicago

64 105-208 (Aug.) 1933

- The Surgeon's Duty in Cancer of Cervix Uteri. H. S. Crossen. St. Louis.—p. 123.
Diagnostic Importance of Roentgenologic Examination of Growing Bones. A. H. Parmelee. Oak Park.—p. 131.
Rectal Obstruction. Lymphogranuloma Inguinale. M. H. Streicher. Chicago.—p. 133.
Proper Education and Registration of X-Ray Technicians. G. Perry. Evanston.—p. 138.
What Is Blindness? Plea for More Frequent Use of Sight Saving Classes in the Public Schools. A. L. Adams. Jacksonville.—p. 143.
Early Care of Paralysis from Acute Anterior Poliomyelitis. Analysis of the Program in Twenty Two Orthopedic Clinics and Hospitals. E. L. Compere and Margaret S. Campbell. Chicago.—p. 150.
Differentiation of Bronchogenic Carcinoma from Mediastinal Tumor. W. H. Newcomb. Jacksonville.—p. 156.
Cooperation Between Departments of Public Health and Practicing Physicians. A. Hall. Mount Vernon.—p. 160.
Medicolegal Aspects of Spontaneous Fractures. K. Garve and C. E. Early. Los Angeles.—p. 164.
Carbuncle. W. D. Pennington. Chicago.—p. 171.
Dawn of a Specialty in Medicine. Allergy and Physical Allergy. W. W. Duke. Kansas City Mo.—p. 174.
Diagnosis and Medical Management of Thyrotoxicosis. A. R. Elliott. Chicago.—p. 185.
Medical Practice in 1950. H. S. Baketel. Jersey City.—p. 191.
Digitalis. E. Podolsky. Brooklyn.—p. 195.
Myocarditis. J. G. Carr. Chicago.—p. 201.

Iowa State Medical Society Journal, Des Moines

23 343-438 (July) 1933

- Leads in Diagnosis. A. A. Schultz. Fort Dodge.—p. 343.
Rupture of Wounds Following Abdominal Operations. G. T. McCauliff. Webster City.—p. 347.
Surgical Accidents. R. A. Becker. Atlantic.—p. 351.
Rational Point of View in Our Practice. H. J. McCoy. Des Moines.—p. 358.
Progress of Women in Medicine. Emma M. Ackerman. Sioux City.—p. 361.

Journal of Infectious Diseases, Chicago

53 1144 (July Aug) 1933

- Seasonal Changes in Cataphoretic Velocity and Virulence of Streptococci as Isolated from Well Persons, from Persons Having Epidemic or Other Diseases and from Raw Milk E C Rosenow Rochester, Minn—p 1
- Comparison by Direct Inoculation of Brilliant Green Bile Two Per Cent and Lactose Broths Including Consideration of Parallel Planting Method of Water Analysis L W Parr Washington, D C and Elfreda L Caldwell Andalusia Ala—p 12
- Variation Within the Colon Aerogenes Group as Found in Bacteriologic Analysis of Water from Contaminated Pumps L W Parr Washington D C and Elfreda L Caldwell Andalusia Ala—p 24
- Mucoid Encapsulated Streptococci in Sporadic and in Milk Borne Epidemic Scarlet Fever I Pilot and D J Davis Chicago—p 29
- Micro Organisms Which Decompose Specific Carbohydrate of Pneumococcus Types II and III Grace M Sickles and Myrtle Shaw Albany N Y—p 34
- Complement Fixation in Vaccinia and in Variola R F Parker and R S Muckenfuss St Louis—p 44
- Metaphen I Results of Use of Metaphen in Experimental Septicemia R G Douglas and K E Birkhaug Rochester N Y—p 55
- Id II Its Experimental Evaluation as an Antiseptic and Disinfectant R G Douglas and K E Birkhaug Rochester N Y—p 71
- Influence of High Frequency Displacement Currents on Bacteria F W Fabian and H T Graham East Lansing Mich—p 76
- Nonspecific Precipitins for Pneumococcal Fraction C in Acute Infections Rachel Ash Philadelphia—p 89
- Agglutination Tests in Diagnosis of Infectious Abortion in Cattle (Bang's Disease) with Especial Reference to the Rapid Test C R Donham and C P Fitch St Paul—p 98
- Dissociation of Clostridium Welchii H R Livesay Washington D C—p 125
- Precipitated Diphtheria Toxoid I Preparation and Antigenic Activity L C Havens and D M Wells Montgomery Ala—p 138

Complement Fixation in Vaccinia and Variola—By the technic of complement fixation, Parker and Muckenfuss demonstrated a specific reaction between the virus of vaccinia and its immune serum. The reaction is influenced by the potency of the serum and the time allowed for fixation, and apparently many of the failures of other workers to demonstrate it have been due to the use of serum of insufficient activity or to too short a period of fixation. Active virus in the antigen is not necessary for fixation. Preparations which had been boiled or passed through a Berkefeld N candle, and in which no virus could be demonstrated, would still fix complement with immune serum although not in as great a dilution as before treatment. These results are probably comparable to those obtained by Craigie in his study of the antigens taking part in the flocculation reaction. Specific complement fixation in smallpox has also been demonstrated by using a specific antivaccinal rabbit serum and the fluid from the pustules of the disease. This has been made possible by the adaptation of the test to a small volume measuring the reagents in drops. Various materials from different cutaneous diseases and the vesicles of varicella have been tested, without false positive results. With vaccinia and variola the results have been uniformly positive when the material was collected before the thirteenth day of the eruption. Difficulty due to bacterial contamination has been avoided by the use of serum prepared against a bacteria free antigen. Serums from ten patients with variola were tested with partial or complete fixation in three. Complement fixation with a specific antivaccinal serum may be of assistance in the early diagnosis of smallpox.

Journal of Lab and Clinical Medicine, St Louis

18 981 1088 (July) 1933

- *Studies on Physiologic Effects of Fever Temperatures Thermal Death Time of Neisseria Gonorrhea in Vitro with Especial Reference to Fever Temperatures C M Carpenter Ruth A Boak I A Mucci and S L Warren Rochester N Y—p 981
- Biochemical Studies on Mechanism of Phenylcinchonic Intoxication O Furth and R Scholl Vienna Austria—p 991
- Treatment of Experimental Streptococcus Meningitis of Rabbits with Bacteriophage Note J A Kolmer and Anna Rule Philadelphia—p 1001
- Spontaneous Cardiac Rupture in the Insane Report of Six Cases H I Stewart Philadelphia and H C Eaton Warren Pa—p 1004
- Dermatologic Test Suggesting Autonomic Imbalance J B Wolffe Philadelphia—p 1012
- Evaluation of Efficacy of Oleic Acid with Bile Salts in Enterohepatic Disease Clinical Experiment with Twenty Five Subjects S Weiss New York—p 1016
- Carcinoma of Stomach with Metastases to the Skin Case Report I H Cripp and H I Miller Pittsburgh—p 1023
- Hydrogen Ion Concentration of Nasal Secretion in Children with Acute Coryza Preliminary Report M C Hill and A R Barnes New York—p 1020

- Marked Creatinemia with Recovery Case J J Selman and C R Linegar Cleveland—p 1032
- Normal Range of Calcium and Inorganic Phosphorus in the Serum of Healthy Nonpregnant Women J W Mull and A H Bill Cleveland—p 1034
- Studies on Gastric Mucin Its Effect on Gastric Acidity D H Rosenberg and L Bloch Chicago—p 1041

Physiologic Effects of Fever Temperatures—Carpenter and his associates determined the thermal death time of fifteen strains of the gonococcus in vitro at fever temperatures of 39, 40, 41, 41.5 and 42 C (102.2, 104, 105.8, 106.7 and 107.6 F). Seven strains had been under cultivation for twelve years, one for ten years and the other seven were isolated from one to four months prior to the experiment. The resistance of the strains of gonococci examined to the fever temperatures was variable. The cultures that were isolated ten and twelve years ago had, on the average, a longer thermal death time than the recently isolated cultures. At 39 C there was little, if any, effect on the growth of the organism. At 40 C, about 99.7 per cent of the organisms were killed by an exposure of ten hours, while death of all the cells was not obtained at thirty hours in eight of the strains. At 41 C, 99 per cent of the gonococci were destroyed in from four to five hours, while death of all the organisms required from eleven to twenty-three hours. At 41.5 and 42 C, 99 per cent of the gonococci were rendered nonviable in two hours. The remainder were killed at 41.5 C in from seven to twenty hours, while at 42 C the thermal death time varied from five to fifteen hours. In all instances the recently isolated cultures, with the exception of one "old" strain, showed the least resistance to 41, 41.5 and 42 C. The in vitro thermal death time of the gonococcus is short enough at 41, 41.5 and 42 C to suggest artificially induced fever as a valuable aid in the treatment of disease due to this organism. It is doubtful whether complete sterilization by heat can be obtained always from a single artificially induced fever of a duration of five hours.

Dermatologic Test—Wolffe found that tissue extract, among many fractions, contains one, apparently a polypeptide, which produces a cutaneous reaction in many persons. Because of its constricting local action he has called this fraction the S, or stricture, substance. It is prepared in the following manner: Pancreas, kidney or any other tissue is extracted with a hydroalcoholic menstruum containing hydrochloric acid. The extract is neutralized with ammonium hydroxide and filtered. The filtrate is acidified and concentrated in vacuo. Ammonium sulphate is added to the clear concentrate, yielding a precipitate which contains the S constituent. This precipitate is extracted with alcohol, and any insulin is removed if pancreas is used. The solution is concentrated in vacuo and passed through a Berkefeld filter leaving a residue which contains most of the S substance. This residue is dissolved in an acid menstruum to give a 3 per cent solution. To perform the test 0.025 cc of the solution is injected subepidermally (not intradermally) by means of a 26 gage needle and a tuberculin syringe. A bleb is produced and in the center of it a purely white area appears. Histologically, the author has found this to be due to focal tissue changes. This usually develops in from three to five minutes after the injection and is considered a positive reaction provided it remains for more than twenty-four hours. A negative reaction is one that fails to show this characteristic white center if 0.025 cc is injected, or when it disappears in less than twenty-four hours. After testing over 500 normal persons and hospital patients the author was impressed with the fact that apparently the so called vagotonic or parasympathetic persons react characteristically to a small amount of S substance, such as 0.025 cc or even less.

Journal of Nervous and Mental Disease, New York

78 1112 (July) 1933

- Vestibular Apparatus in Neurosis and Psychosis I Schuler New York—p 1
- Study of Postural Persistence in Cases of Existencehalutis I S Selling Chicago—p 24
- Simple Apparatus for Intracranial Electroencephalography I M Altman Brooklyn—p 33
- Pellagra with Ocular Dystrophy and Icterus H J Cullen Cambridge Ma—p 37

Journal of Pharmacology & Exper Therap, Baltimore

18 267-374 (July) 1933

- Studies on Calcium VII Some Calcium Effects on Thoracic Lymph Flow of Dogs A L Lieberman Chicago—p 293
- Id VIII Therapeutic Effects of Calcium Gluconate (Calcium Gluconate) on Thrombophlebitic Edema A L Lieberman and I M Zimmerman Chicago—p 301
- Mechanism of Vomiting Induced by Quinidine I Quinidine Emesis in Animals with Denervated Hearts A C Ernst and S Lewis Boston—p 305
- Effect of Anthelmintics on the Host I Tetrachlorethylene II Hexylresorcinol B V Christensen and H J Lynch Cincinnati, Ohio—p 311
- Development of Tolerance to Nicotine by Rats A Behrend and C H Thiemes Los Angeles Calif—p 317
- Effect of Administration of Cyranides on Thyroid Gland of Chickens A W Spence New York and Baltimore—p 327
- Physicochemical Properties of Some New Choline Derivatives in Relation to Their Chemical Constitution and Pharmacologic Action W F Von Oettingen and R O Bowman Cleveland—p 333
- Liver Damage in Dogs and Rats After Repeated Oral Administration of Cinchophen Ethyl Ester of Paramethyl Phenylethanoic Acid (Tolsin) and Sodium Salicylate H G Barbour and M I Felt New Haven Conn—p 341
- Mechanism of Vomiting Induced by Quinidine II A C Ernst and S Lewis Boston—p 359
- Local Anesthetic Action of *p*-Aminobenzoates of Diethylamino Ethoxy Alcohols W H Horne and R J Shriner Urbana Ill—p 371

Medical Journal and Record, New York

138 37-72 (July 19) 1933

- Cold Therapy in Tuberculosis S A Knopf New York—p 37
- Appendicitis From the General Practitioner's Point of View D Stetten New York—p 39
- Paralysis of External Ocular Muscles Report of Four Cases with Recovery S A Agatston New York—p 41
- Obstetric Shock and Maternal Mortality B Mann and S L Israel Philadelphia—p 42
- Concepts of Endocrinology S J Essenson New York—p 44

New England Journal of Medicine, Boston

209 117-166 (July 20) 1933

- Reconstructive Surgery in Chronic Arthritis P D Wilson and R B Osgood Boston—p 117
- Pathology of Carcinoma of Buccal Mucosa in Relation to Results of Treatment C C Lund Boston—p 126
- Syphilis in Relation to Cancer of Buccal Mucosa C C Lund Boston—p 131
- Survey of Resources for Patients with Heart Disease in Clinics and Hospitals of Boston Mabel R Wilson Boston—p 135
- Study of Resources for the Care of Cardiac Children in Boston Mrs T G Abbott Boston—p 137
- The Social Problem of the Child with Heart Disease as Seen in Cardiac Clinics of Massachusetts General Hospital Edith Mortimer Terry, Boston—p 141
- 209 167-218 (July 27) 1933
- Studies on Tumor Metastasis III Distribution of Metastases in Carcinoma of Large Intestine S Warren Boston—p 167
- Volume and Hemoglobin Content of Red Blood Corpuscles in Light of Recent Knowledge of Anemia C W Heath Boston—p 173
- Perinephric Abscess C S Swan Boston—p 180
- Prolonged Bed Rest Treatment in Pulmonary Tuberculosis P Dufault Rutland Mass—p 184
- Ectopic Pregnancy J F Curran and R H Goodale Worcester Mass—p 189
- Hereditary Aspect of Arteriole (Essential) Hypertension Study of Three Generations of a Family D Aymon Boston—p 194
- *Diverticulosis and Diverticulitis of the Colon S A Wilkinson—Boston—p 197
- Esophageal Ulcer in the New Born M M Brown North Adams Mass and E Kellert Schenectady N Y—p 202

Diverticulosis and Diverticulitis of the Colon—Wilkinson reviews the literature on the etiology, pathology and treatment and discusses a method of treatment of diverticulosis and of the milder cases of diverticulitis. It seems more logical to him to attempt to keep the stools formed, to attain one normal evacuation daily to prevent overactive peristalsis and to decrease intra-intestinal pressure. These aims are not always to be achieved but they can be approximated in all cases and, by carrying them out many threatening cases of diverticulitis can be made to quiet down. Rest in bed for the initial period of treatment usually two weeks is of the greatest value and cannot be ignored. The diet a bland low residue, nonirritating one, should have as a basis chiefly carbohydrate foods. At first it should contain no vegetables, fruits or fruit juices. All fluids and foods should be warm. Rectal impaction should be watched for by frequent rectal examinations and prevented by the rectal instillation of a few ounces of warm olive or corn oil. If the stool has reached the rectum this simple measure usually suffices to cause an adequate evacuation. If the patient

complains of an increase in abdominal pain or gas, a small enema (1 or 2 pints) of warm saline solution gives prompt relief. Of the fruit juices orange juice taken hot and diluted is usually the least irritating. This should not be given until the movements are well formed and are becoming regular. Tomato juice is poorly tolerated and is better omitted. All forms of spices and condiments, iced drinks, fresh fruits, the skins or seeds of fruits and vegetables and coarse bread should be forbidden. Medication by mouth is of little value. Tincture of belladonna, however, seems to alleviate the distress from gas and promote a more natural type of intestinal activity. All forms of purgatives, laxatives and even liquid petrolatum should be prohibited.

New Orleans Medical and Surgical Journal

86 77-146 (Aug) 1933

- Gastrointestinal Problems of Vital Significance E H Gauthier Baltimore—p 77
- Treatment of Menstrual Disorders by Injection of Blood from Pregnant Donors Preliminary Report J T Witherspoon New Orleans—p 82
- Diagnosis and Treatment of Enlarged Thymus R E de la Housaye New Orleans—p 91
- Röntgen Ray and Radium Therapy J R Williams Houston Miss—p 96
- New Method of Syringe Transfusion W H Gullentine and M E DeBruke New Orleans—p 100
- Spiral Deformities G I Adams Jackson Miss—p 102
- *Transmission of Tularemia by the Domestic Cat M M Collins Houston La—p 105
- Surgical Parotitis Report of Case Complicating Tonsillectomy A A Heller New Orleans—p 106
- Contact Dermatitis Report of Four Cases B G Efron New Orleans—p 112

Treatment of Menstrual Disorders—Witherspoon treated twenty-five cases of functional disorders of menstruation by the injection of blood from pregnant donors. The technique that he employed was to withdraw 10 cc of venous blood from the cubital vein of a woman in the early months of pregnancy and to inject it immediately in the buttocks of the patient. The injections were given at weekly intervals when the treatment was indicated. From the hormone test described by Frank and Zondek 10 cc of venous pregnancy blood contains from 30 to 100 units of the anterior pituitary luteinizing factor and a variable amount of estrin. Therefore, 10 cc was chosen arbitrarily as the desired dosage because of the lack of local symptoms it produces when injected into the buttocks, and because Zondek has pointed out that small doses are safer when it is desired to bring about the normal processes of ovulation and luteinization, since there is danger, if too great luteinization takes place before ovulation can occur, that the ovum will be imprisoned within the luteinized follicle. The author divides his series of cases into four groups and discusses them separately: eight cases of menorrhagia and metrorrhagia, twelve of amenorrhea, three of primary dysmenorrhea and two of menopausal disturbances.

Transmission of Tularemia—Collins reports the case of a man, aged 33, who required medical treatment because of an infection following the bite of a cat. The patient gave a history of having been bitten on the index finger of the left hand by a 6 months old kitten, fourteen days previously. The abrasion became sore in three or four days and this was followed by a chill, fever, headache and general malaise. Since that time he has had several chills and continuous fever. At the time of examination he had an indolent ulcer on the index finger of the left hand. The epitrochlear gland showed evidence of supuration and the axillary glands were tender and swollen. An incision was made over the epitrochlear gland and drainage instituted. The only other treatment used consisted of hot local applications and general systemic measures. The patient made a slow but progressive recovery. At the time of the first examination a specimen of blood was taken which showed a positive agglutination with *Bacterium tularensis*. The cat was secured and a specimen of blood was taken from the heart. This specimen and another specimen of the patient's blood showed the patient's blood positive to *Bacterium tularensis* in a dilution of 1:1,280 and positive to *Alcaligenes abortus* in a dilution of 1:320. The cat's blood gave a positive agglutination to *Bacterium tularensis* in a dilution of 1:80 but was negative to *Alcaligenes abortus*. The author believes that this proves serologically that the cat may be a carrier to human beings.

Northwest Medicine, Seattle

72 265 310 (July) 1933

- Trend of Venereal Diseases in Oregon T Clark Lida J Usilton and F D Stricker Portland Ore—p 265
Surgical Progress in 1932 R D Forbes Seattle—p 273
Medicolegal Racketeering W Kelton Seattle—p 279
Changing Conceptions in Therapeutic Diets Leila Wall Hunt Pullman Wash—p 282
Nutritional Deficiencies as Suggested by Study of One Hundred Diet Histories C H Hofrichter and May Brossius Seattle—p 289
Diet in Its Relation to the Teeth of the Pregnant Woman and Her Offspring A Mathieu, Portland Ore—p 292
Hemangioma of Vertebra J Aspray Spokane Wash—p 295
Substernal Gutter Its Recognition by Roentgenologic Examination D L Palmer and N W Jones Portland Ore—p 296
Medical Economics Modern Medical Evaluation H G Wright, Seattle—p 298

Ohio State Medical Journal, Columbus

29 465 528 (Aug 1) 1933

- *Thrombosis of Inferior Vena Cava and Extensive Skin Necrosis Following Scarlet Fever Recovery Report of Case W H Bunn Youngstown—p 485
Pathologic Hemorrhage R L Haden Cleveland—p 487
Consideration of Late Effect of Head Injuries H L LeFever Columbus—p 493
Management of Occipitoposterior Positions G A Palmer Akron—p 496

Thrombosis of the Inferior Vena Cava and Necrosis
—Bunn reports a case of skin necrosis occurring in scarlet fever accompanied by thrombosis of the inferior vena cava. The patient is now (eleven years later) in good health, excepting that he has varicose ulcers on both ankles. There is deep scarring of the left hip and there are prominent veins on the abdomen. Canalization of the thrombus of the inferior vena cava was evidently fairly complete, for there is no marked edema of the legs and no retarded development. During the fall of 1928 a sluggish varicose ulcer developed on the left ankle and in 1932 another on the right ankle. It is difficult to keep these healed. The abdominal collateral venous circulation is still active, as evidenced by definite distention of these veins. The lateral veins of the abdomen have remained larger than the anterior, which sign helps to confirm the diagnosis of thrombosis of the vena cava. The author feels that this blocking must have occurred below the level of the renal veins, else the outcome would probably have been fatal. The possibility of a concomitant infection of scarlet fever and diphtheria must be considered in spite of a single negative throat culture. This impression was strengthened by the appearance of a paralysis of the soft palate, which is often seen in diphtheria. What influence the diphtheria antitoxin might have exerted in the production of the hemorrhagic condition cannot be stated. The author knows no method of proving this relationship. However, the patient had never had any serum previous to this illness and consequently could not have been sensitized.

Public Health Reports, Washington, D C

48 839 868 (July 21) 1933

- *Further Studies on Relationship of Viruses of Rocky Mountain Spotted Fever and Sao Paulo Exanthematic Typhus R R Parker and G L Davis—p 839
Heating Effect of Very High Frequency Condenser Fields on Organic Fluids and Tissues J W Schereschewsky—p 844
48 869 906 (July 28) 1933
Incidence of Illness Among Male Industrial Employees in 1932 as Compared with Earlier Years D K Brundage—p 869
Dermatitis from Chemicals Used in Removing Velvet Pile L Schwartz and I Tulpan—p 872
Additional Notes on Preparation and Examination of Thick Blood Films for Malaria Diagnosis W H W Kemp—p 875

Rocky Mountain Spotted Fever—Parker and Davis describe tests which show that the serums of guinea-pigs recovered from Rocky Mountain spotted fever have a degree of protective value against the virus of Sao Paulo exanthematic typhus that is essentially specific and that guinea pigs recovered from Rocky Mountain spotted fever have as high a degree of immunity against the virus of Sao Paulo typhus as they have against that of spotted fever. Thus far only two tests have been made to determine the degree of immunity of Sao Paulo typhus recovered guinea-pigs to Rocky Mountain spotted fever. In both instances the guinea pigs remained afebrile. The data together with the authors' previous observations suggest that Sao Paulo exanthematic typhus and Rocky Mountain spotted fever are immunologically identical.

Southwestern Medicine, Phoenix, Ariz

17 215 250 (July) 1933

- Treatment of Bone and Joint Tuberculosis J W Flinn R S Flinn and Z M Flinn Prescott, Ariz—p 215
Tuberculosis from the Standpoint of the Pediatrician W P Sherrill Phoenix Ariz—p 220
Refractive Errors in Their Relation to General Medicine H L Franklin Phoenix Ariz—p 223
Gas Gangrene Causes and Treatment H Rice Morenci Ariz—p 225
Transurethral Prostatic Resection for Patients Who Constitute Poor Risks G J Thompson Rochester Minn—p 229
Observations on Prostatitis F Farman Los Angeles—p 232
*Related Serum Treatment of Sequelae of Diphtheria E C Houle Nogales Ariz—p 235
Poliobulbar Encephalitis Case Report H Leigh, El Paso Texas—p 238
*Granulopenia Report of Case Following Injection of Gold and Sodium Thiosulphate E W Rheinheimer and L M Smith El Paso Texas—p 239

Related Serum Treatment of Diphtheria—Houle reports three cases of paralysis that developed in an epidemic of relatively few cases so mild in symptomatology as to escape the diagnosis of diphtheria. None of the patients had received original antitoxic treatment. Relatively late specific treatment with antitoxin produced gratifying rapid and a complete cure of the paralysis. The author infers that antitoxin is often given in inadequate quantities and for an inadequate period and that on the development of paralysis, antitoxin should again be administered, with a proper safeguard against sensitization. In one of the desperately ill patients treatment was begun approximately fifty days after the diphtheric inflammation, beginning with 5,000 units, followed by 10,000 and 10,000 and 6,000 units. In the meantime the patient became progressively weaker and a convergent strabismus developed. No improvement whatever was noted for eight days, after which date progress was rapid and continuous. About one month later the boy was walking. He was naturally weak, with persisting evidence of cardiac and renal impairment, but he had recovered full voice, vision, deglutition and respiration. Now, after a lapse of eight years, he is in perfect health. In another case, two weeks after apparent recovery, the patient developed paralysis of the palate and of both legs. 20,000 units of antitoxin produced complete recovery in the third week.

Granulopenia—Rheinheimer and Smith present a case of granulopenia the symptoms of which developed a few hours after a second injection of gold and sodium thiosulphate, which was used in the treatment of a chronic discoid lupus erythematosus. There is no positive proof that the gold was responsible for the condition, but the history is suggestive of a causal relationship. The patient a woman aged 58 complained of red spots on the face which she had noticed for six months. Examination revealed the urine to be normal, red blood cells 4,500,000, white blood cells 8,000, neutrophils 72 per cent, small lymphocytes 24 per cent, large lymphocytes 3 per cent, eosinophils 1 per cent and hemoglobin 90. The patient was given 40 mg of gold and sodium thiosulphate intravenously. This was well tolerated. Six days later, a second similar injection was given. An hour after the ingestion of ice cream, the patient became nauseated and vomited. During the same night she had a chill lasting two hours and followed by high temperature. The following day a generalized erythematous rash appeared accompanied by slight swelling of the hands and feet but no pain. She was thought to have a gold reaction and was given sodium thiosulphate intravenously. This was repeated after two days. In four days the rash had faded and the temperature was normal. The next day she had a severe chill followed by high fever and profuse sweating. A deep erythematous rash appeared over the entire body. The hands, feet and face became swollen. At this time the temperature was 104.1, pulse 104, respiration 18, red blood cells 4,500,000, white blood cells 3,500, neutrophils 52 per cent, small lymphocytes 54 per cent, large lymphocytes 10 and nuclear index 3. The following day the patient was extremely weak and complained of severe pains in all the joints. The tongue, oral cavity and pharynx were deeply congested. The glan, inner surfaces of the cheeks, uvula and anterior pillars were covered with patchy curdled milklike flakes resembling thrombi. The temperature remained high. On this day injective is a dose of 10 cc of 1% nuchide tide were started. In a few days later the patient began to improve. Recovery hereafter is uneventful and the

patient has remained well to the present time. During the course of the illness the urine, blood culture and Wassermann test were negative.

Virginia Medical Monthly, Richmond

60 265 330 (Aug.) 1933

- *New Treatment for Fractures of the Os Calcis R V Funsten University—p 265
- Pyelonephritis with Especial Reference to Etiology B I Harrell Norfolk—p 268
- Some Results of Serum Therapy in Lobar Pneumonia C P Ryland Jr Birmingham N Y—p 272
- Exophthalmic Goiter Review of Our Present Knowledge of the Etiology and Pathology of the Disease R D Jones Jr Norfolk—p 275
- Analysis of the Work of the First Year of the Allergy Clinic of the University of Virginia Medical School O Swineford Jr University—p 281
- Human Ovarian Responses to Extracts of Pregnancy Urine Preliminary Report E C Hamblen Durham N C—p 286
- Growth and Development W I Burdick Chevy Chase D C—p 290
- Diagnosis and Treatment of Benign and Malignant Conditions of the Uterine Body W Neill Jr Baltimore—p 293
- Rupture of Uterus Report of Two Cases L S Crosclose Lynchburg—p 297
- Problems of Acute Female Pelvis Diagnostic Economic F I Kendig Victoria—p 302
- Poliomyelitis J L Hammer Manahaw—p 304
- Pulmonary Tuberculosis in Childhood L R Broome Catonsville Md—p 307
- The Role of the Practicing Physician in the Control of Syphilis R A Vonderlehr Washington D C—p 309
- Peripheral Vascular Reactions Some Facts of Clinical Significance R H Wood Atlanta Ga—p 311
- Medicine as She's Spoke N T Dulanev Bristol Tenn—p 314

Fractures of the Os Calcis—In fractures of the os calcis Funsten insists on a roentgenogram taken from an angle of 45 degrees, through the posterior aspect of the foot showing a projection of the lateral surfaces of the os calcis. In addition anterior-posterior and lateral views are made. In the interpretation of these roentgenograms an attempt is made to determine whether there is an upward displacement of the posterior fragment a lateral displacement of the fragments or an involvement of the subastragloid joint, and whether there is involvement of the calcaneocuboid joint. If any of these conditions is present operative treatment is indicated in which instance a compression bandage is applied to reduce the swelling. The patient is allowed to remain quiet in bed for a period of about one week thereby giving time for tissue reactions. After this the achilles tendon is lengthened by open exposure. The sliding method of lengthening has been the author's choice. Care should be taken that lengthening does not exceed three-fourths inch. This reduces resistance when upward displacement of the distal fragment of the os calcis is corrected and reflexly inhibits the action of the gastrocnemius during convalescence. The wound is closed with number 1 plain catgut. The foot is turned so that the inner malleolus is against a sandbag. An ordinary 3 inch rolled bandage is then placed in a curved position under the external malleolus and the fragments are impacted with a mallet. Next, a nick is made through the skin just anterior to the attachment of the achilles tendon superior to the border of the os calcis, on the outer side of the foot. Through this a number 24 urethral sound is passed to the inner side in which a small incision is made to allow the point to come through over the upper surface of the os calcis. With the toes against the table and with a lever board between the surgeon's chest and the arch of the foot traction is placed on the sound in such a way as to bring the posterior portion of the os calcis down into its normal position restoring the arch of the foot. If lateral impaction is not complete following the restoration of the posterior fragment of the os calcis reimpaction is done. The sound is then removed a suture is placed in each wound and a cast is applied including the bandage under the external malleolus to maintain impaction of the lateral fragments. Two pieces of felt are placed in the arch and traction is made downward on the heel and toes. To insure proper arching the lever board is pressed into the arch while the plaster is hardening. The cast is allowed to remain for six weeks when it is bivalved and motion in the joints begun. Weight bearing is started at ten weeks when the support of the cast is supplemented by a high felt arch support. Thomas heel and single upright brace to prevent strain on lateral motion. The disability has been greatly reduced in the author's fifty-two cases in which he used this procedure.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

21 1172 (July) 1933

- Sympathectomy as an Experiment in Human Physiology J P Ross—p 5
- Parathyroid Tumor Case G Keynes and H Taylor—p 20
- Posttraumatic Epidermoid Cysts of Hands and Fingers E S J King—p 29
- Investigation of Seven Hundred and Forty Two Cases of Hematuria R K Dehenham—p 14
- *Renal and Ureteric Calculi of Unusual Size Reported Formation of Calculi Case I Freshman—p 63
- Osteochondritis Dissecans H A T Fairbank—p 67
- Anatomy of Peripheral Sympathetic Nervous System H H Woollard and R I Norris—p 83
- *Mesenteric Cyst as Cause of Intestinal Obstruction W A Steel—p 104
- Vesical Papilloma with Widespread Metastases Case M F Nicholls—p 108
- Surgery of Sympathetic Nervous System C I Gask—p 115
- Lied Force or March 1901 H Doid—p 131

Renal and Ureteral Calculi—Freshman presents a case of continuous stone formation in the urinary tract which illustrates the enormous size that may be obtained by calculi before giving rise to symptoms severe enough to induce the patient to seek relief. The patient underwent six operations during a period of nine years on seven occasions he was relieved of a calculus or calculi under general anesthesia and once the calculus was voided spontaneously. None of the stones had a core of pure uric acid which might have accounted for their existence some time before becoming opaque to the x-rays. Fifteen months after his last operation the patient is in excellent health and on roentgen examination his right kidney appears to be free of stones. Intravenous pyelography shows good excretion in five minutes and almost normally shaped pelvis and calices.

Mesenteric Cyst—Steel states that it is usually during a laparotomy for some other condition that the presence of a mesenteric cyst is noted. Rarely do these cysts assume such a prominent position as to become the reason for operation, either in virtue of their size or because of some complication. The author reports the case of a girl aged 7 in whom such an operation was necessary. The abdomen was opened under spinal anesthesia by a right paramedian incision. Distended loops of small intestine were at once displayed. The seat of obstruction was found in the ileum about two feet from the cecum. Numerous cysts were present throughout the mesentery. One large cyst had kinked and dragged its weight across the ileum leading to complete obstruction. The cyst and mesentery together with two or three inches of intestine on each side of the cyst were resected and a lateral anastomosis was performed. The abdomen was closed without drainage. The patient made an uneventful recovery. Intestinal obstruction may arise in various ways dependent on the size, position and mobility of the cysts and their situation in the mesentery. The resulting acute obstruction is purely mechanical and is brought about by direct pressure or traction on the intestine while the occlusion may be completed by adhesions or kinks or, in rare instances, by volvulus of the intestine. The condition may be considered or suggested by the history, by isolating a mobile cyst, or by the pain vomiting diarrhea or constipation that arise from the pressure of the cyst. The diagnosis even in uncomplicated cases is difficult, but in the presence of intestinal obstruction an accurate diagnosis is practically impossible.

British Medical Journal, London

2 89 136 (July 15) 1933

- Unity of Gastric Disorders A F Hurst—p 89
- Treatment of Chronic Inflammatory Diseases of Mouth Pharynx and Larynx by Local Application of Ultraviolet Rays A Eidnow—p 94
- *Acute Scarletiform Dermatitis Following Injection of Toxoid Antitoxin G Chesney—p 98
- Treatment of Ringworm of Scalp with Thallium Acetate D R Lewis and W A Lloyd—p 99
- *Posterior Fossa Compression Syndrome L Rogers—p 100
- *Malaria Due to Plasmodium Ovale Stephens 1922 Case N H Fairley—p 101

Dermatitis Following Toxoid-Antitoxin—Chesney presents a case of exfoliating dermatitis, which occurred in a girl of 16 following the injection of two doses of 1 cc of toxoid.

antitoxin given within a period of seven days. He believes that the dermatitis was related to the two injections, as the patient showed acute sensitivity to serum and to the products of metabolism of the diphtheria bacillus, which are found in toxoid, and which, in highly sensitive people, may cause unusually troublesome local or general reactions. Intradermal tests with serum peptone and veal infusion confirmed that the patient was unusually sensitive to serum and that the minute amount of serum in the original injection of 1 cc of toxoid-antitoxin had caused the dermatitis. There was no trace of asthma or any other symptoms of allergy in the previous history of the patient or of her family.

Posterior Fossa Compression Syndrome — Rogers describes a syndrome in which the patient collapses and respiration stops while the heart continues to beat vigorously. If nothing is done the heart soon ceases to beat, the patient previously becoming more and more cyanosed. A failure of the respiratory center evidently takes place, the cardiac center being apparently less vulnerable to the effects of sudden compression, the heart action continues. Artificial respiration results in the diminution of the cyanosis, and patients have been kept alive for ten or twelve hours while artificial respiration has been kept up, but as soon as this has flagged the cyanosis has increased, the heart has slowed, and, when artificial respiration has finally ceased, the patients die. The cause of the syndrome would appear to be the relative vulnerability to pressure of the respiratory as compared with the cardio-inhibitory center. The compression may be produced by hemorrhage into the posterior fossa or by an intracranial tumor or abscess and, in the latter instances, may result from edema in association with the lesion. This was apparently the mechanism in the case that the author reports. Recognition of the syndrome enabled him to relieve the condition and to deal subsequently with its cause, a cerebellar cystic glioma. He states that prompt radical treatment may relieve the sufferer. When in a case of raised intracranial tension—whether from hemorrhage, new growth or abscess—respiratory failure occurs prolonged efforts at artificial respiration should not be carried out but relief of medullary compression should be secured by an emergency decompression of the posterior fossa. Oxygen administered through an intratracheal catheter, as in his case, may enable the operation to be undertaken but failing this an emergency tracheotomy or laryngotomy would be advisable to supply the oxygen by this route. It might be objected that rather than the performance of such a radical procedure a reduction of intracranial tension with relief of medullary compression might be brought about by a ventricular tap or by intravenously administered hypertonic saline solution or dextrose, but such means would appear less certain and would produce only transitory effects. In the syndrome of compression of the posterior fossa therefore the indication would appear to be an extensive mechanical relief of pressure.

Malaria—Fairley cites a case which was an instance of infection with the fourth species of malarial parasite—that is *Plasmodium ovale* Stephens 1922—contracted during a tour in West Africa. Throughout his stay in Africa the patient had consistently taken prophylactic quinine, and this is the probable reason for the long incubation period unless a previous fever of two days' duration can be interpreted as representing the primary malarial attack. The species of parasite was suspected on clinical grounds when the laboratory reported atypical quartan malaria, when the patient though at the onset manifesting quartan, later showed a tertian periodicity. Another peculiar feature was the late time of onset of the rigors which occurred between 6.30 and 7.30 p.m. whereas malarial fever generally commences before or about midday. The biochemical and hematologic observations were of interest. Hemoglobinemia was not evident at the time the plasma was examined but the urobilinuria and hyperbilirubinemia indicated that the blood destruction usually associated with malarial fever was going on. Bile pigments in the urine are unusual in malarial fever and probably originated from a mild toxic hepatitis in this instance. The reticulocytosis reached a maximum of 63 per cent eight days after the initiation of specific treatment. This is a fall in malaria for once the parasites are controlled or destroyed regenerative activity of the bone marrow results in reticulocytosis and new blood formation.

Journal of Pathology and Bacteriology, Edinburgh

37 1168 (July) 1933

- Some Effects of Artificial Pneumothorax on Circulation R. Hilton—p. 1
Filtration of Spirochetes Through Graded Collodion Membranes E. Hindle and W. J. Elford—p. 9
Active Immunization of Pheasants Against Fowl Tumors C. H. Andrewes—p. 17
Further Serologic Studies on Fowl Tumor Viruses C. H. Andrewes—p. 27
Rats as Carriers of *Streptobacillus Moniliformis* Winifred I. Strange—p. 45
Multiple Toxins Produced by Some Organisms of the Clostridium Welchii Group A. T. Glenn, Mollie Barr, Mona Llewellyn Jones, T. Dalling and Helen E. Koss—p. 53
*Cultivation of Virus of Rift Valley Fever R. D. Mackenzie—p. 75
Effect of Experimental Portal Congestion on Absorption and Excretion of Water J. McMichael and F. H. Smirk—p. 81
Formation of Green Pigment from Hemoglobin by *Pneumococcus* P. D. Hart and A. B. Anderson—p. 91
Virus Disease of the Canary of the Fowl Pox Group F. M. Burnet with note on microscopy by J. E. Barnard—p. 107
Congenital Cystic Disease of the Lungs Associated with Giant Cell Hyperplasia of Lymph Glands D. H. Collins—p. 123
Observations on Striated Muscle W. G. Millar—p. 127
Cellular Response of Vitreous Humor to Injections of Bacteria, Blood and Vital Dyes W. A. Gray—p. 137
Application of Vital Staining to Histogenesis of Rous Sarcoma I. A. Haddon—p. 149

Rift Valley Fever—Mackenzie inoculated four mice with virus of Rift Valley fever and two days later one of these showed definite symptoms associated with the infection and was therefore killed. The heart blood was drawn off and two drops of the blood were added to each of a series of 50 cc Erlenmeyer flasks containing 5 cc of Tyrode's solution and chick embryo made up in the proportions used by Rivers. The flasks were then plugged and incubated at 37°C for three days. Three days later, subcultures were made by transferring 0.2 cc of the fluid from each of the original flasks into a new series, thus giving a dilution of 1/25. At the same time, two flasks were selected at random and the titer of the virus in them was estimated by the inoculation of progressive dilutions into mice. From the remaining flasks two mice each were inoculated. The culture fluid, diluted 1/10,000 in one case, killed three mice out of three and in the other case one mouse out of three, and this may be taken as the approximate titer of the fluid. When the next subculture was made one flask was set aside in the cold while the rest were incubated and then, after three days, the titer of the unincubated flask was compared with one of those that had been kept at 37°C. The titer of the virus in the incubated flask was considerably the greater. After this, subcultures were made every three or four days and, when the experiment was voluntarily stopped it had reached the twelfth subculture. At the eleventh subculture the titer was again estimated and it was seen that the titer of the virus remained more or less constant. After the twelfth subculture the fluid from three of the incubated flasks was pooled, filtered through a Seitz filter and inoculated into mice, which died in the usual time with symptoms of Rift Valley fever confirmed by histologic examination of the livers. As the dilution of the inoculum in the primary culture and in each of the twelve subcultures has been approximately 1/25 the final dilution of the infected blood must be about 1 in 15×10^{12} . Infected blood diluted with Tyrode solution alone or with broth or serum and incubated at 37°C shows a gradual loss of titer and is generally completely inactive in about seventy-two hours. The author claims that he has obtained a true increase in virus of Rift Valley fever by *in vitro* cultivation and that the activity of the subcultures cannot be explained in any other way.

South African Medical Journal, Cape Town

7 41* 452 (July 8) 1933

- Benefit Societies C. J. Joubert—p. 419
Nasal Sinus Infection I. F. Iare—p. 421
Liquor Hydrargyri Iodochloridi B. I. and I. Duglis in Treatment of Typhoid N. Faure—p. 423
Bathing in Thermal Water F. C. Cavonius—p. 424
Membranous Dysenteria J. I. Jefferys—p. 425
Diagnosis of Intestinal Ticks C. D. Joubert—p. 426
Treatment of Skin Cancers A. C. Joubert—p. 427
Some Clinging to the View of the Tissue D. I. Joubert—p. 428
Chronic Hydronephrosis with D. I. Joubert—p. 429
K. S. A. Joubert—p. 430
C. I. Joubert—p. 431
P. C. Joubert—p. 432

Gynecologie et Obstetrique, Paris

28 97 240 (Aug.) 1933

- *Surgical Treatment of Hemorrhage Resulting from Placenta Praevia H. Paucot and M. Reeb—p. 97
 Utero-Adnexal Tuberculosis P. Brocq, P. Moulouquet and P. Gibert—p. 146
 Treatment of Utero Adnexal Tuberculosis R. L. Rochat—p. 220

Treatment of Hemorrhage in Placenta Praevia—Paucot and Reeb present a critical evaluation of the results obtained by numerous authors, including themselves, with different methods of treatment of hemorrhages in placenta praevia. The systematic practice of surgical methods is not justified, because the majority of cases are amenable to a wide rupture of the fetal membranes. When rupture of the membranes assures hemostasis and is followed by spontaneous delivery, this method is unequaled from the standpoint of maternal safety, although it is mediocre for the child. In grave cases in which this method is inapplicable or ineffective, low cesarean section has proved to be superior to any other obstetric or surgical procedure in safeguarding the life of the mother and that of the child. The indications for low cesarean section are (1) the necessity of checking immediately the hemorrhages of gestation or labor, independent of the condition of the cervix, of the type of insertion of the placenta or of the life of the fetus, (2) the difficulties inherent in the cervix in the type of insertion of the placenta, and in complex dystocias, (3) failure of obstetric treatment, and (4) desire to save the life of the infant. In cases of suspected infection, low cesarean section may also be employed without grave risk for the mother but a confirmed infection and the poor general condition of the woman often demand hysterectomy (subtotal, Porro) in preference to other complex obstetric methods. Spinal anesthesia is preferred because of its hemostatic properties, if the minimum arterial tension is nearly normal, in hypotension, ether anesthesia is preferable. Preoperative or postoperative blood transfusion is an effective treatment of hemorrhage or shock.

Rivista di Clinica Pediatrica, Florence

31 1025 1152 (Sept.) 1933

- Antidiphtheritic Serotherapy in Pediatric Clinic of Florence in Years from 1894 to 1932 C. Comba—p. 1025
 Morbidity and Mortality Through Diphtheria and Individual Factors D. Moggi—p. 1055
 Glycoregulation in Relation to Psychic Secretion of Digestive Glands G. Sanpaolo—p. 1076
 Infantile Acrodynia (Feer's Disease—Infantile Vegetative Neurosis) G. Frola—p. 1081
 *First Results of Treatment of Parapneumonic Metapneumonic Empyema of Infancy with Intrapleural Injections of Acridine Derivatives G. B. Costa Staricco—p. 1091
 Modification of Metabolism of Creatine Bodies in Avitaminosis. Modifications in Experimental Scurvy G. A. Piana—p. 1098

Treatment of Empyema of Infancy—Costa Staricco treated eighteen patients suffering from empyema and ranging in age from a few months to 5 years. Of these, sixteen were metapneumonic and two were parapneumonic. Bacteriologic examination demonstrated the diplococcus in sixteen patients and the diplophyllococcus in two. All but one showed complete recovery after treatment. Surgical intervention is seldom required after treatment. Only three of the eighteen patients necessitated subsequent operation: two had advanced bilateral empyema and the third a nursing aged 11 months, had pleuropneumonia of the right upper lobe and concomitant empyema throughout the pleural cavity. The author's technic consisted of aspiration of the largest possible amount of pus with a trocar or large needle attached to a syringe and introduction of a solution of 0.1 per cent of chloride of 3.6 diamine 10 methylacridine at body temperature. The pleural cavity is washed with this solution and afterward all the lavage fluid is drained out. Still without removing the needle from 10 to 15 cc of a 0.5 per cent solution of acridine or an amount of this solution corresponding to 0.005 Gm of acridine per kilogram of body weight is injected intrapleurally. Generally from three to four injections are given five or six days apart. If meanwhile examination of the thorax reveals rapid reproduction of the pus simple evacuating punctures should be made. Following treatment the pus becomes dense gelatinous and sterile and disappears gradually. The temperature usually decreases after the first injection and general body improvement occurs. The author highly recommends this treatment for empyema.

Beitrage zur klinischen Chirurgie, Berlin

158 225 336 (Sept. 13) 1933

- Local Circulatory Disturbances of Testicle H. Hellner—p. 225
 *Bile Peritonitis J. Fodor—p. 270
 Value of Circulatory Hormone Produced in Pancreas in Prognosis and Operative Treatment of Gangrene of Extremities F. Prochnow—p. 283
 Vitamins and Wound Healing H. J. Lauber—p. 293
 Contribution to Surgery of Liver (Surgically Treated Hemangio-Endothelioma of Liver) G. Steinberg—p. 303
 *Pressoreceptor Nervous System and Its Practical Significance in Surgery W. Brauckner—p. 309

Bile Peritonitis—Fodor reports two cases of bile peritonitis without visible perforation. It has been established experimentally that bile can pass through a pathologically altered gallbladder wall but not through a normal wall. It appears that bile can pass into the peritoneal cavity under the following clinical conditions: through a microscopic perforation of the extrahepatic bile tracts, especially of the gallbladder, from an anomalous duct in the hilus of the liver from a perforation of a superficial intrahepatic bile duct and from changes in the permeability of the bile ducts. The perforation may be healed at the time the exploration is made. Changes in the wall of the gallbladder may be brought about by pancreatitis. Transudation of sterile bile into the peritoneal cavity may result in an acute cholelotoxicosis or in a cachectic choline poisoning leading slowly to death. The process may become encapsulated and heal. Infected bile may lead to fulminant peritonitis or to a chronic form with nephritis and characteristic bradycardia and fall in the blood pressure. The question as to which factor in the sterile bile acts as a toxic factor has not been definitely solved, the evidence pointing to bile acids and their salts.

A Pressoreceptor Nervous System—Brauckner demonstrated in his studies on rabbits that the concept of a pressoreceptor nervous system as consisting of four nerves, the two superior cardiac nerves and the two carotid nerves branches of the glossopharyngeus, is incomplete. He found the system to be represented anatomically by a very complex network of periaortic plexuses which spread from the cardiac plexus over the arch of the aorta, the common carotid artery, its bifurcation and its branches. The author concludes from his sectioning experiments that the afferent pressoreceptor paths are not limited to the four nerves as previously considered but are a part of the peripheral vegetative nervous system of the neck and the upper part of the thorax. He found the same anatomic relations in man with the additional observation that the pressoreceptor nervous system here extends to the thyroid gland and forms a plexus within the so-called thyroid capsule. Central stimulation of sectioned ends of pressoreceptor nerves causes a twofold stimulating effect on the medullary centers—vaso-dilatation and slowing of the heart. The significance of these facts in relation to surgery of the deep structures of the neck is evident. The question of the possible reflex effect of trauma to the nerve plexus of the thyroid capsule in the course of delivery and resection of the gland presents itself. The author found that signs of bulbar paralysis developing in his animals in the course of dissection of the neck could be successfully combated by a timely venesection. He advances the theory that sudden death in the course of a thyroidectomy, and the so-called postoperative thyrotoxic crises are reflex phenomena resulting from irritation of pressoreceptor nerves. He reports the histories of five patients with thyrotoxicosis, who developed in the course of a thyroidectomy grave signs of impending paralysis of the bulbar centers. Prompt venesection, with withdrawal of from 200 to 300 cc of blood from the anterior jugular vein gave immediate relief of these symptoms. He believes that the remarkable effect of venesection is due to lowering of the blood pressure and reflex diminution of irritative stimuli to the entire pressoreceptor system. To avoid undue irritation of the pressoreceptor paths in the course of a thyroidectomy general anesthesia should be used with addition of local procaine hydrochloride blocking of the pressoreceptor paths. He injects the solution of procaine hydrochloride at the area of bifurcation of the common carotid artery, about the stem of the vagus (lower third of the ganglion nodosum) and into the area of the upper cervical ganglion and the stellate ganglion. Dangerous reactions occurring in spite of these measures are best treated by prompt venesection.

Wiener klinische Wochenschrift, Vienna

46 1113 1136 (Sept 15) 1933

Methods and Results of Roentgenologic Determination of Size of Heart
K Weiss—p 1113*Investigations on Clinical and Biologic Significance of 'Argentaffine' Cells of Gastrointestinal Tract Significance of Argentaffine Cells in Pernicious Anemia G Eros—p 1119
Relapses After Operations on Biliary Tract Their Pathogenesis and Therapy M Kunsztler—p 1122*Leukemic Diseases of Skin L Arzt—p 1125
Orogenic Sepsis During Childhood R Leidler—p 1128
Early Diagnosis of Pregnancy P Werner—p 1130

Argentaffine Cells in Pernicious Anemia—Eros studied the argentaffine cell system in the gastro-intestinal tract and was convinced that this cell system produces a hormone-like substance of vital significance. In examining the intestine of persons who had died from pernicious anemia, he found that the argentaffine system of the intestine is greatly atrophied. Not only is the number of argentaffine cells considerably reduced but their size has also changed and they contain fewer granules. He deduces from this observation that the argentaffine cell system both of the gastro intestinal tract and of certain endocrine organs plays a part in hematopoiesis. He relates animal experiments by which he effected a considerable increase in the argentaffine cells. The intestinal tract of these animals was then used for preparing extracts, the administration of which to animals demonstrated that they promote blood formation and inhibit the development of anemia. The author realizes that a conclusive demonstration of the efficacy of the extract can be obtained only on human subjects. He tried it on a number of persons and found that it promotes blood formation. Extremely small doses of the extract effected an increase in erythrocytes, leukocytes and reticulocytes, while larger doses did not produce an increase and even were followed by a reduction in the formed elements of the blood. Further studies on this problem are still under way.

Leukemic Diseases of Skin—In a classification of the leukemic dermatoses, Arzt shows that this subject is highly complicated. Corresponding to the two types of leukopoietic tissues, the leukemic dermatoses are differentiated into lymphatic and myeloid processes. Discussing the lymphatic processes he directs attention to leukemic tumors that develop in the region of the superciliary arch and may become manifest in prominent ridges. The ears and particularly the nose may become involved and a considerable increase in the size of the nose is a symptom that is especially likely to make the observer think of leukemia. If the process spreads further, the whole face and even the entire head may become involved and the characteristic aspects of leontiasis result. This leontiasis should be differentiated from the leontiasis that occurs in leprosy, because they differ in their etiology. Although the face is the site of predilection for leukemic tumors they may occur at other sites particularly in the region of the elbow of the mammae and of the penis. The decision whether a tumor is of a leukemic nature has to be made as a rule by the histologic demonstration of a leukemic blood picture but the histologic examination may prove helpful. Another cutaneous manifestation of leukemia which differs from the localized tumors is universal lymphomatosis of the skin. Other terms applied to this condition are leukemia cutis diffusa and leukemic erythrodermia. The author thinks that in every erythrodermia the possibility of an underlying leukemia should be considered particularly if pruritus exists. He discusses the comparatively rare occurrence of a leukemic exanthem. It becomes manifest as a small papular exanthem and is localized especially on the trunk. The differential diagnosis of this disorder is difficult and must be based on accompanying symptoms such as a generalized swelling of the lymph nodes. There are other cutaneous manifestations or chronic leukemic lymphomatoses which lack characteristic clinical pictures and may appear as dermatitides, eczemas, erythemas, vesicular dermatoses, urticarial exanthems and cutaneous hemorrhages. The blood picture is generally the only means of diagnosing the disturbance correctly. Only lymphatic leukemia has more or less typical clinical aspects. In discussing the myeloid forms of leukemia the author calls attention to the chronic leukemia myeloid leukemia which is characterized by a certain type of tumor of the bone

But here the face is not the site of predilection and the tumors reach at the most the size of a nut. A predisposition to hemorrhages is likewise noticeable. The author concludes by emphasizing once more the diagnostic significance of pruritus and of the hemogram.

Zeitschrift für Krebsforschung, Berlin

39 417 498 (Sept 12) 1933

Discussion of So Called Acidotic Therapy of Malignant Growths Anna Goldfeder—p 417

Influence of Chemical Preparations on Growth and Disappearance of Transplantable Animal Tumors Anna Goldfeder—p 421

Studies on Immunity Against Inoculation Tumors Conservation of Living Blastoma Cells Under Heterologous Conditions by Passages in Vivo A I Wjleschamir—p 436

Anemia of Carcinoma Rats J Putnoky—p 451

*Nodular Myolysis of Tongue A H Roffo—p 464

Culture of Human Tumors in Vitro Z Zakrzewski and W Kraszewski—p 471

Bacteriologic Studies on Mouse Tumors S Ikeda—p 492

Nodular Myolysis of Tongue—Roffo describes a lesion of the tongue, which he designates as nodular myolysis. He states that, among the 800 cases of lingual cancers that came under his observation within the last four years, this is the second one of this nature. The anamnesis revealed that three years ago the woman first noted a nodule the size of a lentil, which gradually increased to the size of an almond. The growth was on the right side of the tongue and its longest diameter was parallel to the median groove. The nodule was hard but painless and was covered with mucous membrane of normal appearance. Removal of the nodule was followed by cure. The histologic examination disclosed that the lesion involved only the striated muscle fibers of the tongue. It was characterized by loss of striation, change in the structure of the contractile substance, destruction of the fibrils, lysis and complete vacuolation of the fibers. The author assumes a traumatic etiology, since other causes could not be detected.

Zentralblatt für Chirurgie, Leipzig

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Nephrotomy, Pyelotomy and Ureterotomy for Pelvic or Ureteral Stones A Lawen—p 2290

*Neuroma and Carcinoid Tumor of Vermiform Appendix H Hellner—p 2293

Peculiar Erysipelas Like Skin Manifestation in Acute Myeloblastic Leukemia Ca e M Detlefsen—p 2303

Contribution to Subject of Closed Pyopneumothorax H Widenhorn—p 2306

*Advances in Operative Treatment of Heus I Philipowicz—p 2311

Adjustable Extension Clamps for Beds with Angular Iron Frames W Thomsen—p 2316

Sectioning of Gray Sympathetic Branches in Toxic Nutritive Disturbances J Seiffert—p 2317

Neuroma and Carcinoid Tumor of Vermiform Appendix—In all so-called chronic or subacute forms of appendicitis in which the removed appendix shows no microscopic or microscopic evidence of an inflammatory process of the mucosa, Hellner advises a search for alterations in the nervous structure of the appendix. He reports several such instances in which he found neuromas in the submucosal layer of the appendix. In addition there is found at times a tumor formation usually referred to in the literature as carcinoid tumor of the appendix. Ehrlich of Kharkov and Masson of France have independently of one another advanced the neurogenic theory of the origin of this tumor. In his histologic studies, Masson has demonstrated the close relationship of the epithelial cells of the tumor to the nervous elements which appears to establish a relationship between the neuromas and the so called carcinoid tumor. Considered from a histopathologic point of view the tumor is a neuro-ectodermal blastoma. This concept is favored by its benign nature, the presence of neuroma like alterations in the submucosal layer and its close relationship to the nerve plexuses of the mucosal and the muscular layers. These tumors have no relation to carcinoma. They are not known to give rise to metastases. The author's patients who were operated on two and four years ago remained well. These tumors are sometimes found accidentally in the course of an abdominal operation but more often are operated on because of a acute, subacute or chronic appendicitis. He regards the infection of the mucosa here as secondary to the obstruction of the lumen of the appendix by the tumor with resulting stasis

and infection. The author doubts the existence of true carcinoma of the appendix except as a secondary metastatic manifestation.

Advances in Operative Treatment of Ileus—Philpowitz points out that the mortality rate in ileus fluctuates in published statistics between 40 and 60 per cent. The first notable lowering was reported by Morton of Rochester and by himself. Morton's mortality was 28.5 per cent, while the author's amounted to 27.7 per cent. In the last five years the author operated on forty-five patients with ileus and further reduced his mortality rate to 15.5 per cent. In analyzing the causes contributing to the improvement in results, he emphasizes earlier diagnosis and immediate operation. He objects to roentgenographic studies and the employment of high enemas. The short time required for the preparation of the operation is utilized to wash out the patient's stomach, to administer cardiac stimulants and to introduce 0.5 liter of physiologic solution of sodium chloride by hypodermoclysis. However, the main factor in the improvement of the results is the exclusive use of spinal anesthesia practiced by the author for the last six years. The ideal relaxation of the abdominal muscles obtained by this method of anesthesia permits of an easy, even traction of the abdominal contents for the purpose of rapid orientation. The complete paralysis of the anal sphincter and the increased peristalsis following on the release of the obstructed intestine bring about an immediate and satisfactory emptying of the intestine by the natural route. The reposition of the abdominal contents and the closure of the abdominal incision are thus rendered easy. Because the patient is conscious, he is in no danger of aspirating his stomach contents. Surgical procedures on an emptied and now contracted intestine are easier and safer. It was the author's experience that these sick, frequently dehydrated and toxic patients tolerated well the spinal anesthesia. He considers the method by which the obstructed intestine is relieved by an enterostomy without investigation of the cause of obstruction faulty and dangerous. Primary resection should be performed by the expert and only under most favorable conditions, otherwise one should be content with the immediate life-saving procedure only. Early operation, the use of spinal anesthesia and postoperative intravenous infusion of hypertonic salt solution are the three main measures responsible for the improvement in operative results of ileus.

Novyy Khirurgicheskiy Arkhiv, Dnepropetrovsk

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- *Pulmonary Suppuration Due to Aspiration of Foreign Body. A. L. Ginzburg—p. 242

Problems in Biliary Surgery—On the basis of 165 operations on the biliary tracts, Brzhozovskiy analyses the surgical problem in this field. He considers stasis of the gallbladder an early stage of acalculous cholecystitis. Stasis of the gallbladder and acalculous and calculous forms of cholecystitis represent successive stages of the same inflammatory process. Operations in the acute stage are permissible and cholecystectomy is the operation of choice. Primary closure of the abdomen without drainage is indicated in properly selected cases of cholecystectomy and choledochotomy. Cholecystectomy in uncomplicated cases has a negligible mortality. A decisive lowering of mortality as well as improvement in the late results, is to be expected only from earlier operations. Recurrence of pain after operations is caused principally by the persistence of infection in the biliary tracts.

Pulmonary Suppuration Due to Aspiration of Foreign Body—Ginzburg states that suppurative processes in the lung the result of aspiration of foreign bodies are not infrequent. They occur in all ages but with greatest frequency in childhood. The more common localization is the right lung because aspiration of foreign bodies takes place as a rule by way of

the right bronchus. The suppurative process may later extend to the opposite lung, as occurred in one of the author's cases. The recognition of the cause of suppuration in these cases depends primarily on the history and the slow, insidious development of the process frequently interpreted as a recurring pneumonia. One should not rely entirely on roentgenographic data. Any suspicion of a foreign body warrants a consultation with a laryngologist. The amount of involvement depends on the nature of the foreign body and the immunobiologic properties of the invaded organism. The treatment consists of bronchoscopic removal of the foreign body with secondary aspiration of the abscess. Even the neglected cases can be cured, as a rule. Surgical intervention becomes necessary in exceptional cases only.

Hospitaltidende, Copenhagen

76 853 890 (Aug. 24) 1933

- Nupercaine Anesthesia. Review of Application of Nupercaine as Local Anesthetic Together with Considerations Concerning Largest Therapeutic Dose of Substance on Basis of Cases of Nupercaine Intoxication Reported to Date. K. O. Möller—p. 853
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76 909 936 (Sept. 7) 1933

- *Syphilitic Disorders of Central Nervous System. Ctn. E. Geert-Jørgensen, A. V. Neel and G. E. Schrøder—p. 912
- *Progressive Lipodystrophy. K. Brøchner-Mortensen—p. 922
- Occurrence of Leprosy in Scandinavian Countries Since 1900. A. Kismeyer—p. 929

Syphilitic Disorders of Central Nervous System

Geert-Jørgensen and his associates discuss the clinical symptoms and serologic changes in about 900 cases of dementia paralytica on their first hospitalization and in other cases syphilitic mental disorder or mental disturbances in patients having syphilis, with especial attention to the possibility of bringing about earlier treatment of at least part of the cases of dementia paralytica. They state that there is usually a preparalytic stage in two thirds of the cases of dementia paralytica, in men and in women, symptoms of a change in the patient's mental attitude in daily life were seen for from three months to three or four years. Every noticeable psych change in persons between 35 and 45, especially if there is an information of syphilitic infection, should arouse suspicion of a beginning dementia paralytica (Wimmer). A negative Wassermann reaction in the blood of an older patient with syphilis does not testify against a developing paralytic process, a change in the patient's mental attitude should be watched for. In the objective examination especial attention should be paid to changes in the pupils, disturbances of speech, fibrillate about the mouth and of the tongue, facial expression at changes in reflexes. In suspected beginning paralysis or case of doubt, examination of the spinal fluid is advised. The paralytic changes consist of those due to inflammatory reaction and those due to destruction of nervous elements, the latter causing the permanent psychic defect. Examples are given to show that these changes are not always parallel, and the dissociation between the serologic picture and the clinical picture is particularly evident in the fever-treated cases. Treatment of a beginning dementia paralytica with the usual antisyphilitic agents is not only useless but causes the time for fever treatment to be missed and gives the paralytic process a chance to produce irreparable damage in the central nervous system. For good and lasting results in the treatment of dementia paralytica treatment as early as possible, preferably in the preparalytic stage is urged.

Progressive Lipodystrophia—The father and a paternal aunt of Brøchner-Mortensen's patient a woman aged 21 are presenting typical Simon's progressive lipodystrophia, a reported to have had a similar disease when young and have regained a normal appearance in their late twenties. The case is accompanied by some ovarian hypofunction, slight hypertrichosis and petit mal.

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